

AD-783 391

CH-47C/HLH R AND M SIMULATION ANALYSIS

J. J. Dougherty, III

Boeing Vertol Company

Prepared for:

Army Air Mobility Research and
Development Laboratory

July 1974

DISTRIBUTED BY:

NTIS

National Technical Information Service
U. S. DEPARTMENT OF COMMERCE
5285 Port Royal Road, Springfield Va. 22151

Eustis Directorate Position Statement

The Eustis Directorate of the U. S. Army Air Mobility Research and Development Laboratory is developing a simulation capability for assessing the systems-level impact of predicted changes in component reliability and maintainability (R&M) parameters and in proposed changes to maintenance concepts. A general R&M probabilistic simulation model is being used to establish this capability. The R&M simulation model can be used with any aircraft type; e.g., when the requisite input data for the CH-47C has been defined, the model then becomes the CH-47C R&M simulation model. The approach used is to develop a baseline case for a specific aircraft type and then to simulate an alternative configuration and conduct a comparative analysis. This Boeing Vertol report documents the baseline development for the CH-47C and the developmental Heavy Lift Helicopter.

The conclusions and recommendations contained herein are concurred in by this directorate. The comparative analysis contained in this report can be easily replicated or modified for application to other problem areas. The R&M simulation model used, however, is a complex tool that requires substantial skill in application and analysis of results.

The technical monitor of this contract was Mr. Robert L. Walker, Military Operations Technology Division.

DISCLAIMERS

The findings in this report are not to be construed as an official Department of the Army position unless so designated by other authorized documents.

When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility nor any obligation whatsoever; and the fact that the Government may have formulated, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner licensing the holder or any other person or corporation, or conveying any rights or permission, to manufacture, use, or sell any patented invention that may in any way be related thereto.

Trade names cited in this report do not constitute an official endorsement or approval of the use of such commercial hardware or software.

DISPOSITION INSTRUCTIONS

Destroy this report when no longer needed. Do not return it to the originator.

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

AD - 783391

| REPORT DOCUMENTATION PAGE | | READ INSTRUCTIONS BEFORE COMPLETING FORM |
|---|-----------------------|--|
| 1. REPORT NUMBER USAAMRDL-TR-74-9 | 2. GOVT ACCESSION NO. | 3. RECIPIENT'S CATALOG NUMBER |
| 4. TITLE (and Subtitle) CH-47C/HLH R&M SIMULATION ANALYSIS | | 5. TYPE OF REPORT & PERIOD COVERED Final Report |
| 7. AUTHOR(s) J. J. Dougherty, III | | 6. PERFORMING ORG. REPORT NUMBER D210-10714-1 |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS Boeing Vertol Company P.O. Box 16858 Philadelphia, Pennsylvania 19142 | | 8. CONTRACT OR GRANT NUMBER(s) DAAJ02-73-C-0031 |
| 11. CONTROLLING OFFICE NAME AND ADDRESS Eustis Directorate, U.S. Army Air Mobility Research and Development Laboratory Fort Eustis, Virginia 23604 | | 10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS Project 1F162203A119 |
| 14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office) | | 12. REPORT DATE July 1974 |
| | | 13. NUMBER OF PAGES 251 |
| | | 15. SECURITY CLASS. (of this report) Unclassified |
| | | 16a. DECLASSIFICATION/DOWNGRADING SCHEDULE |
| 16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited. | | |
| 17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) | | |
| 18. SUPPLEMENTARY NOTES | | |
| 19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Reliability and Maintainability Maintenance Maintenance Operations Simulation | | |
| 20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This report presents the results of a study which develops and validates CH-47C and HLH (Heavy Lift Helicopter) R&M (Reliability and Maintainability) simulation models. Integral to this study is the development of R&M input data, mission scenarios, and maintenance concepts, representing the CH-47C and HLH in various types of deployment and maintenance support. | | |

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

Unclassified

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

Block 20. Abstract - continued.

The steps taken to perform an analytical validation of the two models (CH-47C and HLH) are demonstrated.

Documentation and rationale are presented for modifications made, under this study, to an original Government-furnished R&M simulation model.

The results of this study are validated R&M simulation models for the CH-47C and HLH and a comparative analysis of the simulated ability of the CH-47C and HLH to perform various missions under several diverse maintenance support plans.

Unclassified

1a

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

PREFACE

This report presents a study to develop valid CH-47C and 'UH R&M simulation models, conducted under Contract DAAJ02-73-C-0031, Project IF162203A119, for the Eustis Directorate, U.S. Army Air Mobility Research and Development Laboratory (USAAMRDL), Fort Eustis, Virginia.

USAAMRDL technical direction was provided by Mr. R. Walker and Mr. H. Bratt.

The principal investigator and Project Engineer for the Boeing Vertol Company was Mr. J. J. Dougherty, III of Product Assurance Methods and Advanced Applications, who was assisted by Mr. A. J. LoGiurato and Ms. J. Vivaldi of Data Central, and Mr. T. Hammer of Maintainability Engineering. Program management and technical direction were provided by Mr. R. G. Hazlett, Manager, Product Assurance New Business Development.

TABLE OF CONTENTS

| | <u>Page</u> |
|---|-------------|
| PREFACE | iii |
| LIST OF ILLUSTRATIONS | vii |
| LIST OF TABLES | ix |
| INTRODUCTION | 1 |
| BASELINE MODEL DEVELOPMENT | 4 |
| R&M INPUT DATA | 16 |
| ALTERNATE MISSIONS AND MAINTENANCE CONCEPTS | 23 |
| MODEL VALIDATION | 42 |
| COMPARATIVE ANALYSIS | 57 |
| CONCLUSION | 70 |
| RECOMMENDATIONS | 71 |
| APPENDIXES | |
| I. Results of Sensitivity Analyses | 72 |
| II. Input Changes for Comparative Analyses | 79 |
| III. Results of Comparative Analyses | 90 |
| IV. CH-47C R&M Input Data Base | 99 |
| V. HLH R&M Input Data Base | 118 |
| VI. Documentation of Modifications to Government- Furnished Simulation Model | 133 |
| LIST OF SYMBOLS AND ABBREVIATIONS | 239 |

LIST OF ILLUSTRATIONS

| <u>Figure</u> | | <u>Page</u> |
|---------------|--|-------------|
| 1 | General Helicopter R&M Simulation Flow | 2 |
| 2 | Program Flow Diagram | 3 |
| 3 | HLH Baseline Overview | 15 |
| 4 | CH-47C Daily Maintenance Action Distribution . . | 17 |
| 5 | HLH Inflight Maintenance Action Distribution . . | 21 |
| 6 | HLH Firm Maintenance Action Distribution . . . | 21 |
| 7 | HLH PMP Maintenance Action Distribution | 22 |
| 8 | HLH 10-Hour Maintenance Action Distribution. . . | 22 |
| 9 | Impact of Run Duration on Availability | 48 |
| 10 | HLH Sensitivity Analyses - Availability Variations | 51 |
| 11 | HLH Sensitivity Analyses - Maintenance Man-hour per Flight-Hour Variations. | 51 |
| 12 | HLH Sensitivity Analyses - Impact of TOE Size Upon Availability | 52 |
| 13 | CH-47C Sensitivity Analysis - Availability as a Function of Malfunction Rate | 55 |
| 14 | CH-47C Sensitivity Analysis - Maintenance Man-hours per Flight Hours as a Function of Malfunction Rate | 56 |
| 15 | CH-47C Comparative Analysis - Availability Variations | 59 |
| 16 | CH-47C Comparative Analysis - Maintenance Manhour per Flight Hour Variations | 60 |
| 17 | CH-47C Comparative Analysis - Mission Completion Ratio Variations | 61 |
| 18 | HLH Comparative Analysis - Availability Variations | 64 |
| 19 | HLH Comparative Analysis - Maintenance Man-hour per Flight-Hour Variations | 65 |

| <u>Figure</u> | | <u>Page</u> |
|---------------|---|-------------|
| 20 | HLH Comparative Analysis - Mission Completion Ratio Variations | 66 |
| 21 | CH-47C Comparative Analysis - Index of Merit Variations | 67 |
| 22 | HLH Comparative Analysis - Index of Merit Variations | 68 |

LIST OF TABLES

| <u>Table</u> | | <u>Page</u> |
|--------------|---|-------------|
| I | CH-47C R&M Simulation Model Scenario-Baseline . | 6 |
| II | Baseline CH-47 Model Parameters | 7 |
| III | Baseline CH-47C Model Input Cards | 8 |
| IV | HLH Baseline Maintenance Concept | 12 |
| V | Baseline HLH Model Parameters | 14 |
| VI | CH-47C Simulated Missions | 24 |
| VII | HLH Simulated Mission Profiles | 26 |
| VIII | Basic CH-47C Maintenance Concept (Based on Existing Maintenance Policy) | 29 |
| IX | CH-47C Maintenance Concept - Alternate A (Based on Proposed HLH Maintenance Concept) . . . | 30 |
| X | CH-47C Maintenance Concept - Alternate B (Based on USN CH-46 Maintenance Concept) | 32 |
| XI | CH-47C Maintenance Concept - Alternate C (Based on USAF H-3 Maintenance Concept) | 33 |
| XII | CH-47C Maintenance Concept - Alternate D (Based on USN UH-1E Maintenance Concept) | 35 |
| XIII | Basic HLH Maintenance Concept (Based on Proposed HLH Maintenance Concept) | 36 |
| XIV | HLH Maintenance Concept - Alternate A (Based on Existing CH-47C Maintenance Concept) | 37 |
| XV | HLH Maintenance Concept - Alternate B (Based on USN CH-46 Maintenance Concept) | 38 |
| XVI | HLH Maintenance Concept - Alternate C (Based on USAF H-3 Maintenance Concept) | 39 |
| XVII | HLH Maintenance Concept - Alternate D (Based on USN UH-1E Maintenance Concept) | 40 |
| XVIII | Relationship of CH-47C Maintenance Concepts to HLH Maintenance Concepts | 41 |

| <u>Table</u> | <u>Page</u> |
|--|-------------|
| XIX HLH Burn-In Analysis | 44 |
| XX CH-47 Burn-In Analysis (Unlimited men) | 45 |
| XXI CH-47C Burn-In Analysis (108-Man TOE) | 46 |
| XXII CH-47 Burn-In Analysis (Standard TOE - 64 Men) | 47 |
| XXIII HLH Validation Analysis | 49 |
| XXIV CH-47C Validation Analysis | 53 |
| XXV Selection of CH-47C Alternate Missions and Maintenance Concepts | 58 |
| XXVI Selection of HLH Alternate Missions and Maintenance Concepts | 62 |
| XXVII Relative Ranking of Maintenance Concepts . . . | 69 |
| XXVIII CH-47C Sensitivity Analyses | 73 |
| XXIX HLH Validation - Number of Aircraft Sensitivity | 75 |
| XXX HLH Validation - Number of Squawks Sensitivity | 76 |
| XXXI HLH Validation - PMP Sensitivity | 77 |
| XXXII HLH Validation - Personnel Sensitivity | 78 |
| XXXIII CH-47C Alternate Maintenance Concepts - Basic Mission | 80 |
| XXXIV CH-47C Alternate Maintenance Concepts - Mission 1 | 81 |
| XXXV CH-47C Alternate Maintenance Concepts - Mission 2 | 82 |
| XXXVI CH-47C Alternate Maintenance Concepts - Mission 3 | 83 |
| XXXVII HLH Alternate Mission 1 | 85 |
| XXXVIII HLH Alternate Mission 2 | 85 |
| XXXIX HLH Alternate Mission 3 | 85 |

| <u>Table</u> | <u>Page</u> |
|--|-------------|
| XL HLH Alternate Maintenance Concept A | 86 |
| XLI HLH Alternate Maintenance Concept B | 87 |
| XLII HLH Alternate Maintenance Concept C | 88 |
| XLIII HLH Alternate Maintenance Concept D | 89 |
| XLIV CH-47C Comparative Analysis | 91 |
| XLV HLH Comparative Analysis | 95 |
| XLVI CH-47C Input Data - Airframe System | 100 |
| XLVII CH-47C Input Data - Communication and Navigation System | 101 |
| XLVIII CH-47C Input Data - Drive System | 102 |
| XLIX CH-47C Input Data - Electrical System | 106 |
| L CH-47C Input Data - Equipment System | 107 |
| LI CH-47C Input Data - Landing Gear System | 108 |
| LII CH-47C Input Data - Flight Control System | 109 |
| LIII CH-47C Input Data - Hydraulic System | 111 |
| LIV CH-47C Input Data - Rotor System | 112 |
| LV CH-47C Input Data - Indicating System | 114 |
| LVI CH-47C Input Data - Powerplant System | 115 |
| LVII HLH Input Data - Non-ATC Systems | 119 |
| LVIII HLH Input Data - Rotor System | 121 |
| LIX HLH Input Data - Cargo Handling System | 124 |
| LX HLH Input Data - Drive System | 128 |

INTRODUCTION

Assessment of potential Reliability and Maintainability (R&M) hardware component research efforts requires an evaluation of the benefit of the proposed effort. Application of an Army-developed R&M simulation model to a specific helicopter type can provide a realistic, timely assessment of research potential. The approach consists of changing the "component R&M definitions" or maintenance concepts to reflect the desired changes, processing the resultant configuration through the R&M model, and then performing comparative analysis of the results.

One of the primary reasons for developing a simulation model is to evaluate operational relationships that are impractical or impossible to analytically investigate. Many of the problems which the model is used to solve are related to the availability/utilization function. The impact that variations in utilization have upon availability, personnel, spares, and support equipment usage can best be analyzed by means of simulation.

Personnel allocations, probability of spares availability, failure rates, and maintainability rates are entered as input to the model. Operating under the strictures defined by a prearranged mission schedule and maintenance philosophy, the model--by implementation of a Monte Carlo selection routine--selects certain tasks to be performed to simulate the repair of randomly occurring failures. Thus, by simulating the maintenance occurring over any given time frame, the model gives its user the ability to analyze his resource allocations. A flow diagram (Figure 1) presents an overview of how the operational and maintenance environment is simulated for a company of aircraft.

To provide a means of R&M assessment, Boeing Vertol has developed and documented in this study valid R&M simulations of the CH-47C and the developmental Heavy Lift Helicopter (HLH). Applicable R&M data was analyzed and transformed into probabilistic statements for input into the Government-furnished R&M simulation model. Alternative inspection schemes were developed and simulated and the results evaluated in terms of operational and logistics support impact. This scheme was accomplished by performing the tasks described in the flow chart in Figure 2.

The result of this study provides CH-47C and HLH models through which scheduled operations and available maintenance resources can be used to determine their effect on equipment availability and maintenance resource usage rate. Various relationships such as the availability/utilization relation

may be investigated and optimized in compliance with the constraints inflicted by the resources available and mission designated.

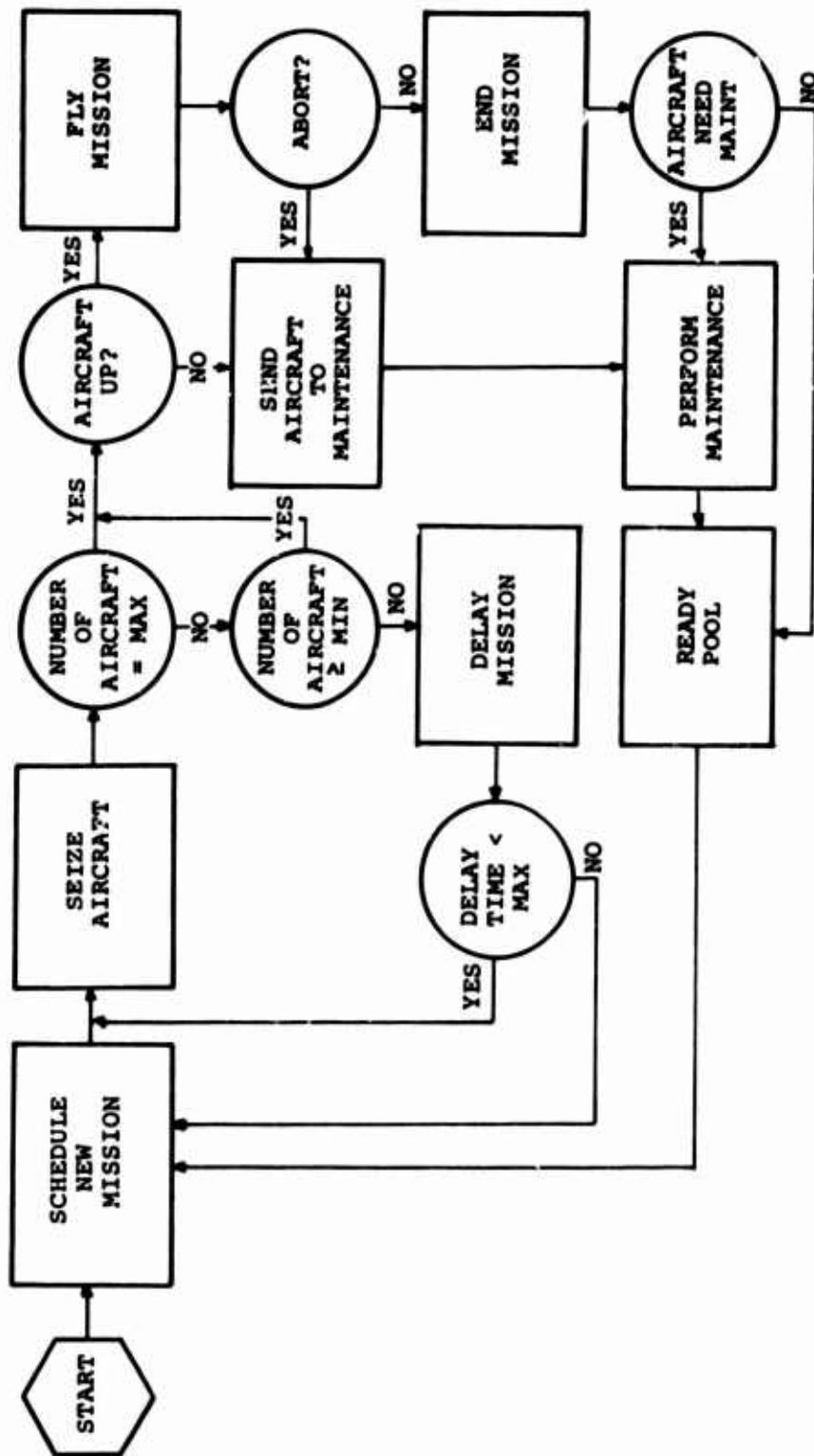


Figure 1. General Helicopter R&M Simulation Flow.

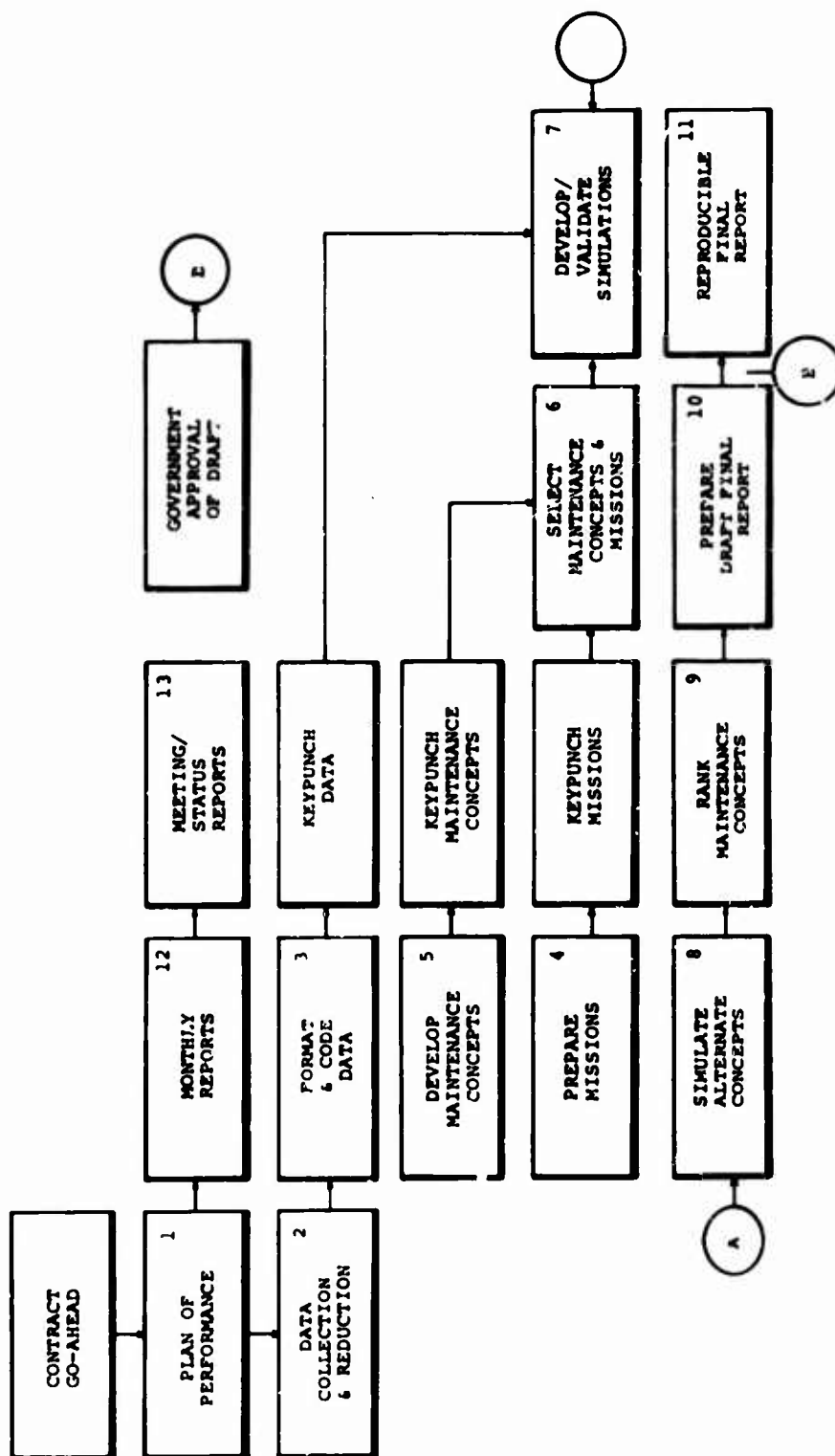


Figure 2. Program Flow Diagram.

BASELINE MODEL DEVELOPMENT

INTRODUCTION

It was the intent of this study to develop validated simulation models for the CH-47C and HLH and employ these models in a maintenance concept comparative analysis to demonstrate model capability for analytical application.

As such, the baseline models have been defined in a sufficiently general manner to allow for the comparative analysis with no logical modifications to the model. Rather, the mission concept and maintenance parameters, unique to the baseline models, are all defined by input data cards.

CH-47C - BASELINE MODEL DEFINITION

The probabilistic and deterministic R&M function tables have been defined for the baseline CH-47C model by direct application of historical data. It is felt that, although this data is a composite generated by aircraft flying rather diverse missions, the distribution of missions flown had a tendency to be centrally located around the baseline mission. Furthermore, the maintenance concept employed in support of the aircraft which generated this data base was, with only minor exceptions, identical to the baseline maintenance concept defined for use in the simulation model. Thus, the baseline model is considered an accurate representation of the actual O&M concept employed on the CH-47C.

CH-47C BASELINE MISSION

The baseline CH-47C mission is a composite developed over hundreds of thousands of flight hours of Chinook application in CONUS, Europe, and Southeast Asia. The expected CH-47C monthly utilization derived from the data generated by this experience is approximately 54 hours per aircraft per month. Furthermore, this data shows an expected Chinook mission length of 1.5 flight hours per mission.

The standard CH-47C company consists of 16 aircraft. For the baseline mission, a delay of up to 30 minutes is acceptable before a mission is scrubbed. Another baseline flight consideration is the requirement that a standby aircraft be maintained in a ready status at all times during the scheduled flying intervals.

Table I is the first page of output from the CH-47C simulation model. It defines the O&M scenario being simulated. Contained in this table are the precise times and number of aircraft relevant to each launch for the baseline mission.

CH-47C Baseline Maintenance Concept

The nucleus of the CH-47C maintenance concept is the 100-hour PMP. Almost half of all unscheduled maintenance and essentially all scheduled maintenance occur at this inspection. Reference can be made to the subsequent section of this report dealing with R&M Input Data to identify the quantitative basis for this qualitative statement.

The other essential elements of the CH-47C maintenance concept are the 25-hour PMI and daily inspection. When taken in conjunction with the PMP, these inspections account for the detection and correction of almost all unscheduled CH-47C maintenance requirements. The only--and rather obvious--exceptions to this statement are those failures detected during flight. Those failures, causing downing, but not aborts, are repaired immediately upon mission completion. This is contingent, of course, upon the availability of the necessary maintenance resources.

Table I provides a narrative, established by the simulation model, of the maintenance concept being simulated. The parametric values relevant to the CH-47C baseline maintenance concept are contained in Table II.

The manner in which the parametric entities of the baseline maintenance concept and mission are input to the model is identified in the input data cards displayed in Table III.

TABLE I. CH-47C R&M SIMULATION MODEL SCENARIO-BASELINE

Scenario Simulated

One platoon of 16 Army helicopters.

Flying program consisted of 7 flying days per week, with each simulation interval covering an 8-week period.

Mission duration is 1.5 hours with a utilization of 108 hours per aircraft for the 8-week period.

Launch schedule during each flying day

| | | | |
|------|------------|------|------------|
| 0700 | 3 aircraft | 0830 | 3 aircraft |
| 1000 | 3 aircraft | 1130 | 3 aircraft |
| 1300 | 3 aircraft | 1430 | 3 aircraft |
| 1600 | 3 aircraft | 1730 | 3 aircraft |
| 1900 | 3 aircraft | | |

Other Flight Considerations

Standby aircraft ready at all times during the scheduled flying intervals.

Mission flight is possible up to 30 minutes after scheduled flight time. After this interval, flight is scrubbed.

Maintenance Concept Simulated

Periodic maintenance inspections (PMP) occur at intervals of 100 hours.

Preventive maintenance daily (PMD) inspections occur daily if the aircraft has flown or every 72 hours if not flying. Maintenance personnel are available between 0600 and 2200 during the 7-day flying period per week.

The aircraft consists of 293 elements. There are 16 time change components within this total.

An intermediate inspection (PMI) is performed every 25 flight hours.

Organizational maintenance includes an integrated direct support maintenance capability.

Off equipment component maintenance is performed at the depot level.

Condemnation or NRTS status is a dummy evaluation.

Basic CH-47C mission and maintenance philosophy.

TABLE II. BASELINE CH-47 MODEL PARAMETERS

- 16 aircraft per platoon
- 100-hour PMP, requiring 6 men for 7.5 hours each
- 25-hour PMI, requiring 3.5 men for 3.4 hours each
- Daily inspection performed @ 1830 each day requiring 2 men for 2.4 hours each
- TBO values ranging from 300 hours to 2400 hours
- Utilization of 54 hours per aircraft per month
- Maintenance action rate of 1.3 per flight hour
- Flying and maintenance take place 7 days a week
- 2 maintenance shifts of 8 hours each used daily

TABLE III. BASELINE CH-47C MODEL INPUT CARDS

[illegible]

TABLE III. Continued

| | | | |
|-------|------------------|--|----------|
| TOTAL | 441(4,10),3 | LAUNCH # 5 NUMBER A/C -1ST PRIORITY | 00156100 |
| TOTAL | 441(7,10),3 | LAUNCH # 7 NUMBER A/C -1ST PRIORITY | 00156200 |
| TOTAL | 441(4,10),3 | LAUNCH # 9 NUMBER A/C -1ST PRIORITY | 00156300 |
| TOTAL | 441(3,10),3 | LAUNCH # 2 NUMBER A/C -1ST PRIORITY | 00156400 |
| TOTAL | 441(1,11),70 | TIME TO BEGIN 1ST LAUNCH PREP. | 00156500 |
| | | MINUS 2 CLOCK UNITS. | 00156600 |
| TOTAL | 441(2,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00156700 |
| TOTAL | 441(4,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00156800 |
| TOTAL | 441(3,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00156900 |
| TOTAL | 441(5,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00157000 |
| TOTAL | 441(7,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00157100 |
| TOTAL | 441(4,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00157200 |
| TOTAL | 441(3,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00157300 |
| TOTAL | 441(1,12),9 | NUMBER OF LAUNCHES PER DAY | 00157400 |
| TOTAL | 441(4,12),0 | SLACK TIME HOURS TYPE 1 (10THS) | 00157500 |
| TOTAL | 441(4,12),0 | TOTAL TIME FROM CALL TO LAUNCH-10THS | 00157600 |
| TOTAL | 441(4,13),0 | END OF ATTACHMENT IN 10THS | 00157700 |
| TOTAL | 441(7,13),0 | LAUNCH TIME TO REPLACE AIRCRAFTS-10THS | 00157800 |
| TOTAL | 441(1,17),999 | PERCENT IN-FLT AIRCRAFTS REPLACED/1000 | 00157900 |
| TOTAL | 441(1,15),1 | NO. STATIONS A/C BY HOURS TYPE | 00158000 |
| TOTAL | 441(1,19),7 | FLT STATIONS FOR AIRCRAFT REPLACEMENTS | 00158100 |
| TOTAL | 441(1,16),2 | NO. OF LAUNCH EVENTS BY HOURS TYPE | 00158200 |
| TOTAL | 441(1,21),5 | TIME LAUNCH #4 FROM STATION | 00158300 |
| TOTAL | 445(25,1),2400 | T87 INTERVAL IN 409-TTCH # 1 | 00158400 |
| TOTAL | 445(25,2),1400 | T87 INTERVAL IN 409-TTCH # 2 | 00158500 |
| TOTAL | 445(25,3),2000 | T87 INTERVAL IN 409-TTCH # 3 | 00158600 |
| TOTAL | 445(25,4),1200 | T87 INTERVAL IN 409-TTCH # 4 | 00158700 |
| TOTAL | 445(25,5),1200 | T87 INTERVAL IN 409-TTCH # 5 | 00158800 |
| TOTAL | 445(25,6),1200 | T87 INTERVAL IN 409-TTCH # 6 | 00158900 |
| TOTAL | 445(25,7),1200 | T87 INTERVAL IN 409-TTCH # 7 | 00159000 |
| TOTAL | 445(25,8),1200 | T87 INTERVAL IN 409-TTCH # 8 | 00159100 |
| TOTAL | 445(25,9),2000 | T87 INTERVAL IN 409-TTCH # 9 | 00159200 |
| TOTAL | 445(25,10),2400 | T87 INTERVAL IN 409-TTCH # 10 | 00159300 |
| TOTAL | 445(25,11),1200 | T87 INTERVAL IN 409-TTCH # 11 | 00159400 |
| TOTAL | 445(25,12),1200 | T87 INTERVAL IN 409-TTCH # 12 | 00159500 |
| TOTAL | 445(25,13),1200 | T87 INTERVAL IN 409-TTCH # 13 | 00159600 |
| TOTAL | 445(25,14),1200 | T87 INTERVAL IN 409-TTCH # 14 | 00159700 |
| TOTAL | 445(25,15),300 | T87 INTERVAL IN 409-TTCH # 15 | 00159800 |
| TOTAL | 445(25,16),300 | T87 INTERVAL IN 409-TTCH # 16 | 00159900 |
| TOTAL | 445(25,17),30000 | T87 INTERVAL IN 409-TTCH # 17 | 00160000 |
| TOTAL | 445(25,19),30000 | T87 INTERVAL IN 409-TTCH # 19 | 00160100 |
| TOTAL | 445(27,1),0317 | T87 T24-ELEMENT # 1 | 00160200 |
| TOTAL | 445(27,2),0325 | T87 T24-ELEMENT # 2 | 00160300 |
| TOTAL | 445(27,3),0329 | T87 T24-ELEMENT # 3 | 00160400 |
| TOTAL | 445(27,4),0333 | T87 T24-ELEMENT # 4 | 00160500 |
| TOTAL | 445(27,5),0335 | T87 T24-ELEMENT # 5 | 00160600 |
| TOTAL | 445(27,6),0337 | T87 T24-ELEMENT # 6 | 00160700 |
| TOTAL | 445(27,7),0339 | T87 T24-ELEMENT # 7 | 00160800 |
| TOTAL | 445(27,8),0341 | T87 T24-ELEMENT # 8 | 00160900 |
| TOTAL | 445(27,9),0343 | T87 T24-ELEMENT # 9 | 00161000 |
| TOTAL | 445(27,10),0347 | T87 T24-ELEMENT # 10 | 00161100 |
| TOTAL | 445(27,10),0357 | T87 T24-ELEMENT # 10 | 00161200 |

TABLE III. Continued

[illegible]

HLH - Baseline Model Definition

All R&M input parameters employed in the definition of the HLH model have been developed extraneous to this study by Boeing Vertol Reliability and Maintainability Engineering Analyses. In all these analyses, the baseline mission and maintenance concept were held constant (and identical to those subsequently employed in the simulation model development). Described by prudent synthesis of analytical evaluation and engineering judgement, the baseline HLH model is the most accurate representation of the realistic application of the aircraft available.

HLH Baseline Mission

It is anticipated that a standard HLH company will contain 9 aircraft. These aircraft will each fly approximately 50 hours per month, primarily composed of 2.0-hour missions.

Again, as was the case for the CH-47C baseline model, a standby aircraft is required at all times during scheduled flying operations.

Table IV, the first page of output of the HLH simulation model, defines the unique call times and numbers of aircraft per launch for the baseline HLH model.

HLH Baseline Maintenance Concept

The HLH maintenance concept is centered upon a 600-hour, periodic inspection divided into 12 autonomous, 50-hour phases. In reality, each of these phases, with only minor overlap for inspecting safety of flight items, will inspect distinct sections of the aircraft. The aircraft has been partitioned (with respect to maintenance) into 12 segments, each of which requires approximately the same amount of look-phase inspection time.

Theoretically, the components located in the aircraft partition being inspected during any phase of the PMP should have a higher probability of maintenance than those not being inspected. However, due to a practical limitation of the model, this area has been intentionally biased. That is, at each inspection phase, the same relative probability of detection distribution has been employed. It is felt, however, that this bias is minimal, considering the number of PMP's being performed per simulation and the size of the random variation in detected elements generated by each simulation run.

TABLE IV. HLH BASELINE MAINTENANCE CONCEPT

Scenario Simulated

One platoon of nine Army helicopters

Flying program consisted of 7 flying days per week, with each simulation interval covering an 8-week period.

Mission duration is 2.0 hours with a utilization of 100 mission flying hours per aircraft for the 8-week period.

| | |
|------|------------|
| 0700 | 2 Aircraft |
| 1000 | 1 aircraft |
| 1300 | 3 aircraft |
| 1400 | 1 aircraft |
| 1900 | 2 aircraft |

Other Flight Considerations

Standby aircraft ready at all times during the scheduled flying intervals.

Mission flight is possible up to 30 minutes after scheduled flight time. After this interval, flight is scrubbed.

Maintenance Concept Simulated

Phased periodic maintenance inspections occur at twelve intervals of 50 hours.

Preventive maintenance periodic (PMP) inspection is completed at 600-hour intervals.

FIRM inspections occur daily if the aircraft has flown or every 72 hours if not flying.

Maintenance personnel are available between 0600 and 2200 during the 7-day flying period per week.

The aircraft consists of 182 elements. There are no time change components within this total.

A 10-hour inspection is performed every 10 flight hours. Organizational maintenance includes an integrated direct support maintenance capability.

Off equipment component maintenance is performed at the depot level.

Condemnation or NRTS status is a dummy.

Evaluation

Basic HLH mission and maintenance philosophy.

The other elements of the HLH maintenance concept are a 10-hour inspection and a firm (daily) inspection.

Table V identifies the parametric values employed in the baseline HLH maintenance concept.

Figure 3 shows the logical interaction of the elements of the baseline HLH model, and quantifies some of the significant O&M parameters.

Evaluation of Government Furnished R&M Simulation Model

The Government-furnished R&M simulation model provided Boeing Vertol to use in this analysis was defined upon a UH-1N aircraft and Army operational procedures. The model is written in GPSS and requires approximately 300,000 bytes of CPU core, and 5 minutes of CPU time to execute. Originally, the model was logically too tight for general application. That is, the model was so dependent upon the R&M characteristics and mission scenario of the UH-1 helicopter, that it required significant modification in order that it could be applied in the manner required. The critical areas requiring modification were, (1) generalization of mission length application, (2) generalization of PMP/PMI decision, (3) activation of NORS logic, (4) accountability of NORS downtime, (5) expansion of PMI logic, and (6) an increase in the number of aircraft/company the model can accommodate.

Forty-three blocks of logic were added to the original twelve hundred and forty blocks. Twenty blocks of logic were modified. Approximately three hundred cards were added to the output editor. Several new variables were defined. Approximately three hundred savevalues were modified. The one hundred seventy three variable statements were labeled and the initial cards used in the CH-47 and HLH models were labeled.

It is felt that these generalizations to the model enabled Boeing Vertol to accomplish the contractually required comparative analyses in a more timely manner than would have been possible employing the original model without modification.

Appendix VI presents a detailed identification of the modifications made to the original Government-furnished R&M simulation model. These changes, taken in conjunction with the documentation of the original UH-1 model in Army Technical

Report 73-75, constitute the total documentation package for the CH-47C and HLH baseline R&M simulation model.

TABLE V. BASELINE HLH MODEL PARAMETERS

- 9 aircraft per platoon
- 50-hour phased PMP, requiring 2.5 men for 8.0 hours
- 10-hour inspection, requiring 2.5 men for 4.0 hours
- Firm inspection performed at 2100 each day requiring 2 men for 0.3 hour each
- All components operate on-condition
- Utilization of 50 hours per aircraft per month
- Basic mission length of 2.0 flight hours
- Maintenance action rate of 1.05 per flight hour
- Flying and maintenance take place 7 days a week
- 2 maintenance shifts of 8 hours each are used each day

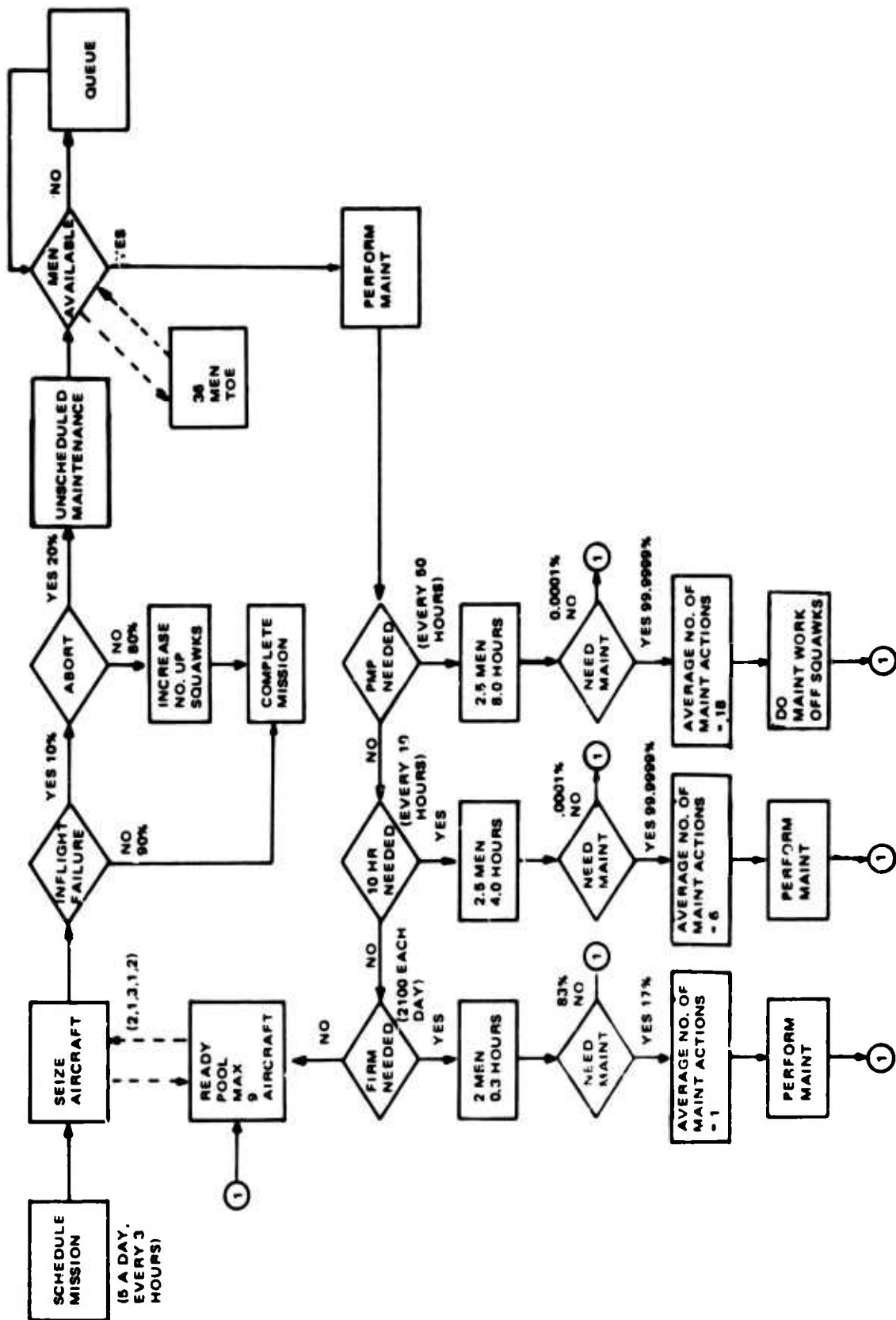


Figure 3. HLH Baseline Overview.

R&M INPUT DATA

INTRODUCTION

In order that the data collection and analysis task would not dominate the total engineering effort, this study was intended to make maximum use of available CH-47C and HLH R&M data. All basic R&M data elements such as maintenance action rates, mean times to repair, and crew sizes have been extracted from Vertol-developed and -maintained data banks. It has been assumed that all R&M data elements, extracted from the data banks and transformed into a format compatible with the model requirements, are quantitatively and qualitatively valid.

DATA SOURCES

CH-47C

R&M data inputs for the CH-47C have been extracted from the Boeing-Vertol CH-47C/L11 Reliability and Maintainability Field Experience Summary, based on 4132.2 flight hours at the U.S. Army Aviation Test Board, Fort Rucker, Alabama, between June 1969 and September 1970.

HLH

R&M input data for the HLH have been extracted from Boeing-Vertol Document D301-10004-1, HLH Preliminary Design Objectives for the subsystems not covered by the HLH Advanced Technology Components (ATC) contract. For the subsystems covered by the HLH ATC contract, the R&M input data have been extracted from the individual, elemental Maintenance Engineering Analyses (MEA's) performed by Boeing-Vertol maintainability engineering under the HLH ATC contract.

CH-47C R&M DATA

The basic R&M data used to develop the majority of functional and probabilistic inputs to the CH-47C model are contained in Appendix IV. It is felt that these data elements and their relationship to the model function table requirements are straightforward, not requiring any detailed discussion. This section discusses those input data elements which were developed analytically or through engineering judgement and, as such, warrant greater consideration. The function tables falling into this category are functions 2, 10, 12, 14, and 55.

Function 2 - The event probabilities of success coded in this table are based upon an analysis of the previously mentioned CH-47/L11 R&M field experience summary.

This evaluation showed that for the PMI and PMP inspections, there was virtually no probability of successfully performing the ground event; therefore, for the PMI and PMP events, numbers 8 and 17, respectively, in function Table 2, a value of .000001 has been coded.

This data analysis showed that, essentially, all daily inspections resulted in unscheduled maintenance actions. However, the data showed that the mean time between daily inspections is 6.7 flight hours. Further analysis shows the average utilization per aircraft per day is 3.5 hours. Thus the average number of days between dailies based on historical data for the CH-47C is estimated as 1.9 days. The model, as presently constructed, generally distributes use uniformly over each aircraft per company, rather than using one aircraft per day, which is, according to current CH-47C data, presently being employed. Therefore, a probability of detection of $1/1.9$ has been employed as the best estimate of daily inspection probability of failure. Thus for the daily inspection events, number 16 in function Table 2, a value of .500000 has been coded.

Function 10 - This function table contains the cumulative distribution function (CDF) for the number of maintenance actions detected in flight, given that at least one maintenance action has been detected in flight.

Quantitative data is not available for defining a table of this type; thus the distribution has been defined based on engineering judgement. The expected number of maintenance actions detected in flight, conditional upon the detection of at least one maintenance action is, 1.1 maintenance action for the mission length of 1.5 hours.

Function 12 - This function table contains the CDF for the occurrence of multiple maintenance actions at the daily inspection. In 615 daily inspections contained in the CH-47C data base, a total of 1913 maintenance actions were detected. This yields an expected number of maintenance actions of 3.1 per inspection. The manner in which these maintenance actions were distributed for the simulation analysis is shown in Figure 4.

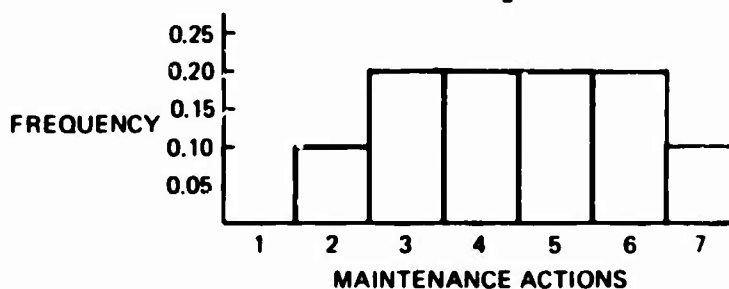


Figure 4. CH-47C Daily Maintenance Action Distribution.

Function 14 - Contained in this table is the cumulative distribution function for the number of maintenance actions detected at a PMP, given that at least one maintenance action has been detected at the PMP. An analysis of 41 PMP's contained in the CH-47C data base identified 2767 maintenance actions; thus the expected number of maintenance actions per failed PMP is 67.5. The values contained in this table have been derived by assuming that the distribution underlying the number of maintenance actions per failed PMP is the normal distribution with mean \bar{X} equal to 67.5 and standard deviation S equal to $\bar{X}/6$ or 11.3.

Function 56 - This table contains the cumulative distribution function for the number of maintenance actions at a PMI, given that at least one maintenance action has been detected at the PMI. An expected number of maintenance actions per PMI of 6.7 has been estimated, based upon the 167 PMI's contained in the data and their resultant 1127 maintenance actions. Again, as in the case of the PMP a normal distribution with mean (\bar{X}) equal to 6.7 and standard deviation (S) equal to $\bar{X}/6$ or 1.1 is employed.

HLH R&M Data

Appendix V contains the basic R&M data inputs employed to develop the HLH model. As was the case for the CH-47C, the transition from predicted R&M data into function tables is basically straightforward enough to require no further discussion. However, the development of tables 2, 10, 12, 14, and 55 for the HLH, where no data was available, required definition and implementation of a mathematical model for estimating functional data elements.

A brief derivation of a math model which can be used for this purpose follows. The fundamental assumption of this model is that the number of maintenance actions detected at any inspection is positively correlated to the amount of time spent in look-phase maintenance at that event.

Assume that three inspections exist at which maintenance can be detected for a certain aircraft.

Further assume that for each of these three inspections, a known time between occurrence (f_i), crew size (C_i), and EMT (EMT_i) exists.

Now, establish an interval of arbitrary length (I), such that each inspection can be expected to occur an integral number of times.

Then, the expected number of maintenance actions per each occurrence of inspection i can be estimated as

$$\left(\begin{array}{c} \# \text{ MA'S} \\ @ \text{ inspection} \end{array} \right)_i = \frac{(C_i)(EMT_i)}{\sum_{j=1}^3 \frac{(C_j)(EMT_j)}{(f_j)} (MTBMA)}$$

It is recommended that the previous equation be modified for most applications to include a deferral factor (d_i). Thus, the equation becomes

$$\left(\begin{array}{c} \# \text{ MA'S} \\ @ \text{ inspection} \end{array} \right)_i = \frac{(C_i)(EMT_i)(d_i)}{\sum_{j=1}^3 \frac{(d_j)(C_j)(EMT_j)}{(f_j)} (MTBMA)}$$

where the d_i values are chosen in such a manner that the MTBMA is held constant over interval L.

Now, assume that the number of maintenance actions at inspection i is Poisson distributed with mean equal to the

$$\left(\begin{array}{c} \# \text{ MA'S} \\ @ \text{ inspection} \end{array} \right)_i$$

One can now use a Poisson table to calculate the probability of exactly 0, 1, 2, 3,, N, . . . , ∞ maintenance action, simultaneously occurring at inspection i .

The probability associated with 0 maintenance actions is one input required by the model - viz - event probability of success, contained in function 2.

In order to calculate the conditional distribution of maintenance actions per failed event, merely divide the probabilities associated with each number of maintenance actions by (1-event P (success)).

Do this for each of the i inspections. Thus, both types of probabilistic functions required by the model are developed.

To emphasize this technique, consider its application to the HLH, where the following data has been employed.

| Event No. | Event Name | Time Between Occurrences | Crew Size | EMT | Deferral Factor |
|-----------|------------|--------------------------|-----------|-----|-----------------|
| 1 | firm | 2 hours | 2 | 0.3 | 0.5 |
| 2 | 10-hour | 10 hours | 2.5 | 4.0 | 0.5 |
| 3 | phased PMP | 50 hours | 2.5 | 8.0 | 1.0 |

This data, when taken with the total aircraft MTBMA (Mean Time Between Maintenance Actions) of 0.95 hour is then used in the math model, yielding the following results.

Event No. (i) Event Name No. Maintenance Actions_i/Cycle

| | | |
|---|------------|-----|
| 1 | firm | 7.5 |
| 2 | 10-hour | 24 |
| 3 | phased PMP | 20 |

Thus, using the frequency of occurrence of the i inspections and a subjective estimate of the probability of detecting maintenance at each of the i inspections, the following data has been developed for input to the probabilistic function tables.

| Event No. (i) | Event Name | L/ f_i | No. Maintenance Actions _i @ Inspection _i | Subjective Probability of Maintenance |
|---------------|------------|-------------|--|---|
| 1 | firm | 25 | 1.0 | 0.3 |
| 2 | 10-hour | 4* | 6.0 | 0.999999 |
| 3 | phased PMP | 1 | 20.0 | 0.999999 |

This data is then used to define function tables 2, 12, 14, and 55. Again (as was the case for the CH-47C) the assumption has been made for the PMI and PMP inspections that the number of maintenance actions detected per inspection is normally distributed with mean, \bar{X} , equal to the expected number of maintenance actions per inspection, and standard deviation, S , equal to $\bar{X}/6$.

For the daily and inflight conditional expected number of maintenance actions, function tables 10 and 12 respectively, a truncated Poisson distribution has been subjectively defined. The frequency distributions employed in constructing function tables 10, 12, 14 and 55 are shown in Figures 5 through 8.

Coding of the data presented in the succeeding plots in the format required by the function tables is demonstrated in Appendix VI.

*A PMI is not performed concurrently with the PMP, thus only 4 PMI's per cycle (not 5 as would be calculated using the formula) will take place.

90% of HLH inflight maintenance occurrences result in 1 maintenance action. 10% result in 2 maintenance actions

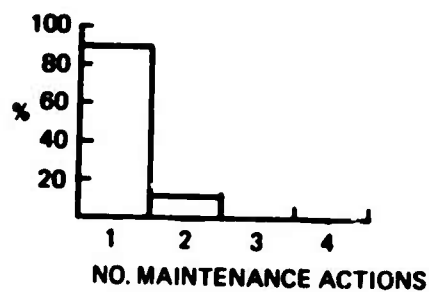


Figure 5. HLH Inflight Maintenance Action Distribution.

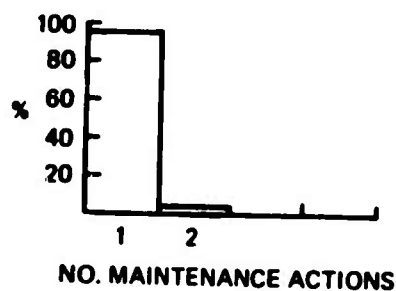


Figure 6. HLH Firm Maintenance Action Distribution.

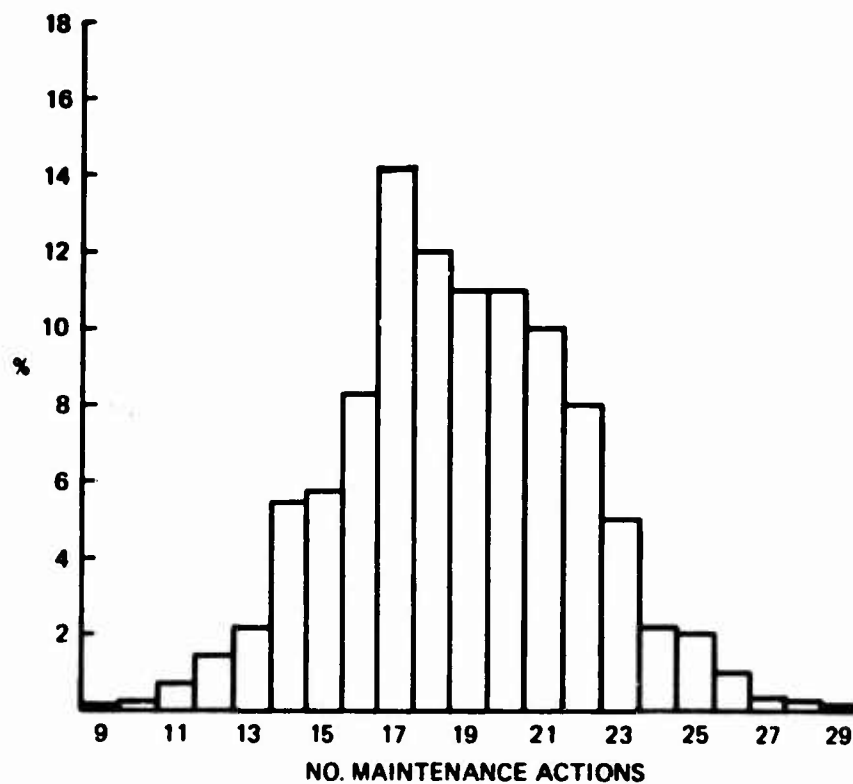


Figure 7. HLH PMP Maintenance Action Distribution.

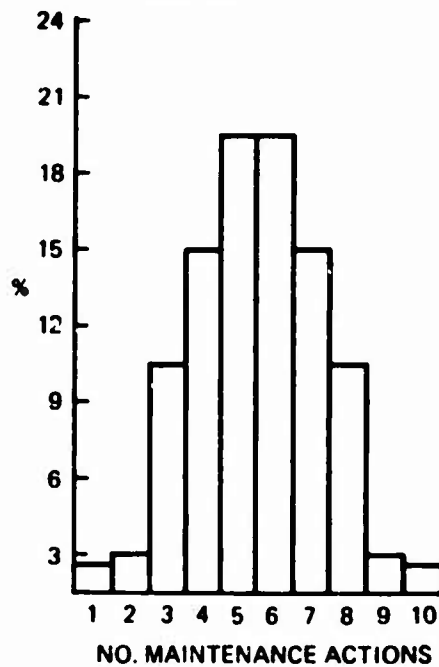


Figure 8. HLH 10-Hour Maintenance Action Distribution.

ALTERNATE MISSION AND MAINTENANCE CONCEPTS

This section identifies the several missions and maintenance concepts defined for the CH-47C and HLH as candidates for simulation in the R&M model. This will demonstrate the suitability of the model for application to typical maintenance analysis.

All missions defined are considered by the airframe manufacturer to be feasible applications of the aircraft being simulated.

All simulated maintenance concepts are based on realistic maintenance applications. As such, the alternate maintenance concepts and missions defined in this section represent a cross section of Operations and Maintenance (O&M) scenarios in which the aircraft could be utilized and maintained.

ALTERNATE MISSION CONCEPTS

CH-47C Missions

The four CH-47C simulated missions shown in Table VI are representative of the aircraft's uses. The following discussion will briefly define each of these four scenarios.

Combat Support (Basic Mission) - This mission is based on Chinook experience in the Republic of Vietnam. An average of 56 hours per aircraft per month is used. Sixteen aircraft are located in one spot. Scheduled missions require 3 aircraft for 1.5 hours per mission, and a standby aircraft is constantly kept ready during the scheduled flying periods.

Logistic Support (Alternate Mission 1) - This mission has been defined to be representative of Chinook application in a sustained surge mission, typical of a relatively high intensity conflict. A full company of sixteen CH-47C aircraft are located and deployed from one location in a resupply mission, generally requiring seven aircraft per mission for 1.5 hours per aircraft.

CONUS Minimum (Alternate Mission 2) - Several peacetime applications of the CH-47C have been combined into a composite CONUS mission. Eleven aircraft are deployed at one location where they perform functions varying from training missions to cargo handling. Each mission duration is 1.5 hours, with one aircraft required per mission.

Fort Rucker Lead-the-Fleet Program (Alternate Mission 3) - In order to provide Time Between Overhaul (TBO) extension data on CH-47C dynamic components, several Chinooks (usually three)

| TABLE VI. CH-47C SIMULATED MISSIONS | |
|---|-----------------------|
| <u>Combat Support</u> | (Basic Mission) |
| Utilization = 56 hours/month/aircraft 2 hours/day/aircraft, 7 days a week | |
| Sixteen aircraft at a location | |
| One standby aircraft is required | |
| <u>Logistic Support</u> | (Alternate Mission 1) |
| Utilization - 168 hours/month/aircraft 6 hours/day/aircraft, 7 days a week | |
| Sixteen aircraft at a location | |
| Mission length is 1.5 hours and requires 7 aircraft | |
| No standby required | |
| <u>CONUS Minimum</u> | (Alternate Mission 2) |
| Utilization - 30 hours/month/aircraft 1.5 hours/day/aircraft, 5 days a week | |
| Eleven aircraft at a location | |
| Mission length is 1.5 hours and requires 1 aircraft | |
| No standby required | |
| <u>Fort Rucker</u> | (Alternate Mission 3) |
| Utilization = 100 hours/month/aircraft 5.0 hours/day/aircraft, 5 days a week | |
| Three aircraft at location | |
| Mission length is 1.5 hours and requires 1 aircraft | |
| No standby required | |

have been located at the U.S. Army Aviation Test Board facility at Fort Rucker, Alabama, since 1963. These aircraft have been generally flown more than the rest of the CH-47 fleet.

For this analysis, 100 hours per aircraft per month has been employed. Each mission requires 1.5 hours with one aircraft required per mission. Flights occur 5 days a week rather than 7 days a week, as is the case for all other missions defined herein for the CH-47C.

HLH Missions

The HLH missions shown in Table VII represent four of the possible missions in which a Heavy Lift Helicopter could be employed. The following discussion will identify the pertinent operational characteristics of these areas.

HLH Combat Support Mission

This is the baseline mission for the Heavy Lift Helicopter. Nine aircraft are located in one spot and a utilization of 50 hours per aircraft per month is anticipated. Flying takes place over a 7-day week. Each mission requires between 1 and 3 aircraft and is assumed to take 2 hours. A standby aircraft, required at all times, is kept in an alert status during scheduled flying periods.

HLH Container Unloading

Three Heavy Lift Helicopters are deployed from a single spot (possibly a harbor) where they perform a container unloading mission. Due to the large amounts of cargo to be moved, missions of this type could be expected to place a high utilization requirement on the aircraft. For this analysis, a utilization of 150 hours per aircraft per month has been employed. Each 2-hour mission requires one aircraft and flying occurs 5 days a week.

HLH CONUS Mission

This mission is a composite of several of the CONUS missions in which a Heavy Lift could be employed, ranging from cargo handling to training missions. Nine aircraft will be deployed from one location. Missions, generally requiring three aircraft and taking 2 hours, will take place on a 5-day week basis.

| TABLE VII. HLH SIMULATED MISSION PROFILES | |
|--|-----------------------|
| <u>HLH Combat Support Mission</u> | (Basic Mission) |
| Utilization = 50 hours/month/aircraft 1.8 hour/day, 7 days a week Nine aircraft at a location One standby aircraft is required | |
| <u>HLH Container Unloading</u> | (Alternate Mission 1) |
| Utilization = 150 hours/month/aircraft 7.5 hours/day, 5 days a week Three aircraft at a location Each mission is 2 hours long and requires only 1 aircraft No standby required | |
| <u>HLH CONUS Minimum</u> | (Alternate Mission 2) |
| Utilization = 20 hours/month/aircraft 1 hour/day, 5 days a week Nine aircraft at a location Each mission is 2 hours long and requires 3 aircraft No standby aircraft required | |
| <u>HLH Combat Support Surge Mission</u> | (Alternate Mission 3) |
| Utilization - 280 hours/month/aircraft 10 hours/day, 7 days a week Nine aircraft at a location Each mission is 5 hours long and requires 3 aircraft A standby aircraft is required | |

HLH Combat Support Surge Mission

One of the more important operational requirements of the Heavy Lift Helicopter is that it can sustain a 300-hour per aircraft per month surge over a 60-day period. This mission would typify a high-intensity conflict where 9 aircraft, located at one spot, will be flying essentially every minute that they are available for flight, 7 days a week. It has been assumed for this analysis that each mission requires 3 aircraft and will take 5 hours. Due to the importance of this mission and the realization that contingencies could arise requiring that an additional aircraft be displaced to some other location, a standby aircraft is required.

ALTERNATE MAINTENANCE CONCEPTS

CH-47C Maintenance Concepts

Five maintenance concepts have been developed for the CH-47C, consisting of the baseline existing CH-47C maintenance concept and four alternative maintenance concepts. The four variations from the original or baseline concept represent significantly different philosophies of scheduled inspection and scheduled maintenance, varying from levels of TBO's for dynamic components to the elimination of all TBO's from the aircraft, that is, operating the aircraft on condition. The following discussion will briefly define each of these five maintenance concepts.

For all runs of the CH-47C comparative analysis, the same Table of Organization and Equipment (TOE Number 1-258H) has been employed. The personnel allocated within this TOE has been aggregated into 7 categories of personnel types for use in the simulation analysis. The quantities of personnel for each of these 7 categories, and the corresponding Army Military Occupation Specification (MOS) designations, are shown below. Two shifts of 8 hours each were used for all runs.

| Skill Code | MOS Number | MOS Nomenclature | Shift 1 Quantity | Shift 2 Quantity |
|------------|------------|----------------------|------------------|------------------|
| 01 | 67UXX | Helicopter Repairman | 20 | 10 |
| 02 | 68GXX | Airframe Repairman | 12 | 6 |
| 03 | 35KXX | Avionics Repairman | 3 | 2 |

| Skill Code | MOS Number | MOS Nomenclature | Shift 1 Quantity | Shift 2 Quantity |
|------------|------------|----------------------|------------------|------------------|
| 04 | 35LXX | Avionics Repairman | 2 | 0 |
| 05 | 68FXX | Electrical Repairman | 4 | 2 |
| 06 | 68HXX | Hydraulics Repairman | 2 | 0 |
| 07 | 68EXX | Rotor Repairman | 2 | 0 |

CH-47C Existing Maintenance Concept

Table VIII identifies scheduled maintenance requirements, inspection requirements, and mission information data on the baseline CH-47C mission. It can be seen from this table that TBO levels vary from 300 hours on the engine to 2400 hours on certain elements of the shaft assembly. The inspection concept calls for the performance of the daily inspection after the last flight of the day or preceding the first flight of the next day, an intermediate inspection performed in 25-hour increments, and a periodic inspection performed every 100 hours. Preflight and postflight inspections are not performed by the maintenance crew and are therefore not chargeable to maintenance. These inspections are merely walkaround safety-of-flight inspections performed by the pilot, copilot, or crew chief before and after flight.

CH-47C Maintenance Concept - Alternate A

This simulated maintenance concept shown in Table IX is based upon the presently considered baseline mission and maintenance concept for the Heavy Lift Helicopter. The scheduled maintenance concept for the aircraft requires all components to be operated on condition. The inspection concept requires: (1) a firm inspection which can be considered analogous to the daily inspections of the CH-47C baseline mission except in terms of duration and content of those things inspected; (2) a 10-hour inspection performed in conjunction with the firm inspection which covers those areas previously considered performed in the daily inspection; and (3), the Phased Periodic Inspection (PPI) which is performed every 50 hours. In performing the various phases of the periodic inspection, the aircraft is divided into six independent areas, all of which require essentially the same elapsed maintenance look-phase time. After six sequential phases of inspection, the total periodic maintenance inspection has been completed. Due to some

TABLE VIII. BASIC CH-47C MAINTENANCE CONCEPT (BASED ON EXISTING MAINTENANCE POLICY)

| A. Scheduled Maintenance | | | | |
|------------------------------------|-----------------------|---|--|---|
| Component | P/N | TBO | Retirement Interval | |
| Forward transmission | 114D1200-5 | 1200 | N/A | |
| Aft transmission | 114D2200-7 | 1200 | N/A | |
| Engine combining transmission | 114D5200-2 | 1200 | N/A | |
| Engine mechanical transmission (2) | 114D6200-4 | 1200 | N/A | |
| Aft rotary wing drive shaft | 114D3250-1 | 1800 | 3600 | |
| Sync shaft assembly | All Appl. | 2400 | N/A | |
| Sync shaft adapter | 114D3241-1 | 2400 | N/A | |
| Engine drive shaft assembly | 114D3067-3 | 2400 | N/A | |
| Forward rotary wing head | 114D3247-1 | 2400 | N/A | |
| Aft rotary wing head | 114R2003-3 | 1200 | N/A | |
| Forward swashplate assembly | 114R2004-4 | 1200 | N/A | |
| Aft swashplate assembly | 114R3508-8 | 1200 | N/A | |
| Forward rotor blades (3) | 114R3505-11, -12 | 1200 | N/A | |
| Aft rotor blades (3) | 114R1502-33 | N/A | 6000 | |
| Engine | 114R1502-34 | N/A | 4000 | |
| | T-55-L-11 | 300 | N/A | |
| B. Inspections | | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description | Rationale |
| (1) Daily | 2 men 2.37 hours | After the last flight of the day or preceding the next day's first flight | Consists of visual examination and operational checks to determine that the aircraft can safely and efficiently perform its assigned mission | Scheduled inspections are required in order to assure that latent defects are discovered and corrected before malfunctioning or serious trouble results |
| (2) Intermediate | 3.5 men 3.44 hours | Every 25, 50, and 75 flying hours after completion of the periodic inspection | Provides verification of satisfactory functioning at frequencies between the daily and periodic inspections | Same as daily |
| (3) Periodic | 6 men 7.55 hours | Every 100 flying hours | A comprehensive, thorough, and searching inspection of all items which are subject to adjustment, discrepancies, or failures | Same as daily |

TABLE IX. CH-47C MAINTENANCE CONCEPT - ALTERNATE A (BASED ON PROPOSED HELI MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | | |
|--|---|--|--|--|
| None - All components are replaced "on condition". | | | | |
| B. Inspections | | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description | Rationale |
| (1) Flight inspection Requirement minimum (firm) | 2 men 12 min | After each flying day | Minimum safety of flight inspection which supplants present daily inspection. Only items directly related to safety of flight are considered. | Historical CH-47C DATA has shown that many of the items on the daily checklist rarely fail. This inspection would cover only those things critical to safety of flight. Reduced maintenance by ex- tending the inspection interval of non "flight critical" items |
| (2) Ten-hour inspection | 2.5 men 3.5 hours | Each 10 flight hours in conjunc- tion with the firm | Covers those areas previously included in the conventional daily inspection that are not classified as "flight critical". | Improvements in inspection methods and reliability will reduce the need for "look phase" inspection and in- crease the interval between periodic inspections. This concept permits the aircraft to be removed from flight status for shorter periods of time during anticipated downtime periods, permitting efficient flight scheduling, improved personnel utiliza- tion and increased availabil- ity. Deferred maintenance accrual is attenuated, if not completely eliminated. |
| (3) Phased Periodic Inspection (PPI) | 2.5 men 7 hours for each phase | Progressive phases - every 50 flight hours | The PPI will be divided into 6 phases, each of which will be performed every 50 flight hours. A full inspection will be completed in 300 flight hours, at which time another cycle will be initiated. | |

limitations of the existing form of the R&M simulation model, the application of this maintenance concept is slightly biased; that is, at each phase of the PPI, it is assumed that every item of the aircraft is capable of being observed as a failure, rather than just those items that would be normally covered in that look-phase of the periodic inspection. It is felt, however, that due to the manner in which the six phases of the periodic inspection would be constructed, the bias injected by performing the analysis is minimal. Again, as in the case of the baseline mission, preflight inspections are not chargeable to maintenance.

CH-47C Maintenance Concept - Alternate B

This concept shown in Table X represents an adaptation of the Navy maintenance concept for supporting a CH-46 to an Army CH-47C maintenance concept. Scheduled maintenance of dynamic components consists of TBO levels varying from 1200 hours for transmissions to 2400 hours for the engine and certain elements of the sync-shaft assembly. The inspection concept consists of, (1) a turnaround inspection performed prior to each flight of the day and after the last flight of the day, which is essentially a combination of preflight and postflight inspections, (2) a daily inspection performed prior to the first flight of the day, and (3) a calendar periodic inspection performed at 34-week intervals. The interesting point of differentiation between this concept and the existing maintenance concept is that the periodic inspection is not aircraft-clock oriented, but rather calendar-time oriented. Incorporation of this maintenance concept into the comparative analyses, which will be discussed in detail later, required certain areas of modification to the model to enable evaluation of periodic inspection requirements based on the calendar rather than clock-time orientation.

CH-47C Maintenance Concept - Alternate C

This concept depicted in Table XI represents the adaptation of an Air Force H-3 maintenance concept to an Army CH-47C application. All components are to be replaced on condition; that is, there is no scheduled removal of dynamic components. The inspection concept consists of a preflight inspection, performed prior to each flight of the day, a postflight, performed after each flight of the day, and a phased periodic inspection, performed at 100 flying hour intervals. The major distinction between this alternate maintenance concept and the baseline and other alternate maintenance concepts is the replacement of the daily inspection with the postflight inspection performed after each flight, not just after the last flight of the day.

TABLE X. CH-47C MAINTENANCE CONCEPT - ALTERNATE B (BASED ON UH CH-46 MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | | |
|----------------------------------|---------------------|--|---|---|
| Component | P/N | TBO | Retirement Interval | |
| Forward transmission | 114D1200-5 | 1200 | N/A | |
| Aft transmission | 114D1200-7 | 1200 | N/A | |
| Engine combining transmission | 114D5200-2 | 1200 | N/A | |
| Engine mechanical transmission | 114D6200-4 | 1200 | N/A | |
| Aft rotary wing drive shaft | 114D3250-1 | 1800 | 3600 | |
| Sync shaft assembly | All Appl. P/N's | 2400 | N/A | |
| Sync shaft adapter | 114D3243-1 | 2400 | N/A | |
| Sync shaft adapter | 114D3047-3 | 2400 | N/A | |
| Engine drive shaft assembly | 114D3247-1 | 2400 | N/A | |
| Forward rotary wing head | 114R2003-3 | 1200 | N/A | |
| Aft rotary wing head | 114R2004-4 | 1200 | N/A | |
| Forward washplate assembly | 114R3508-8 | 1200 | N/A | |
| Aft washplate assembly | 114R3505-11, -12 | 1200 | N/A | |
| Forward rotor blades | 114R1502-33 | N/A | 600 | |
| Aft rotor blades | 114R1502-34 | N/A | 4000 | |
| Engine | T-55-L-11 | 2400 | N/A | |
| B. Inspections | | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description | Rationale |
| (1) Turnaround/servicing | 1 man 20 min | Prior to each flight and after last flight | Primarily a visual inspection to determine obvious defects between flights, degradation that may have occurred during flight and the required servicing | Purpose of the turnaround inspection is to reduce downtime between flights. It contains the minimum requirements to insure the integrity of the aircraft for flight |
| (2) Daily | 2 men 60 min | Prior to the first flight of the day | These requirements are to inspect for latent defects at a greater depth than performed in the turnaround | Purpose is to determine degradation and to insure the aircraft is safe for flight |
| (3) Calendar-periodic (airframe) | 9 men 13 hours | At 34-week intervals | A thorough and detailed inspection of the complete aircraft to inspect for material degradation that may have occurred during the preceding calendar period and to perform essential preventive maintenance | Calendar concept permits more efficient scheduling of aircraft operations and maintenance, thereby improving aircraft availability |

TABLE XI. CH-47C MAINTENANCE CONCEPT - ALTERNATE C (BASED ON USAF H-3 MAINTENANCE CONCEPT)

A. Scheduled Maintenance: None - All components are replaced "on condition".

B. Inspections

| Type | Crew & Elapsed Time | When Accomplished | Description |
|-----------------------|------------------------|------------------------|--|
| (1) Preflight | 2 men 30 min | Prior to each flight | Inspection consists of checking the helicopter for flight preparedness by performing visual examination and operational checks of certain components to assure no defects or maladjustments exist that could cause accidents or aborted missions |
| (2) Postflight | 2 men 20 min | After each flight | Inspection consists of checking the helicopter to determine if it is suitable for another flight by performing visual examination of certain components, areas or systems to assure no defects exist which would be detrimental to further flight |
| (3) Phased inspection | 3 men 3.5 hours | Every 100 flying hours | <p>The complete inspection cycle for the weapon system is assumed to be 1200 hours. A portion of the total recurring inspection requirements is accomplished at each phased inspection. Certain items are considered basic phase requirements and will be accomplished in conjunction with each phase (100 flying hours) inspection. The inspection cycle will be repeated, starting with phase number one, 100 hours after completion of the 12th phased inspection.</p> <p>Included in each phased inspection are requirements for checking certain components, areas or systems of the helicopter to determine that no condition exists which, if not corrected, could result in failure or malfunction of the component prior to the next scheduled inspection</p> |

CH-47C Maintenance Concept - Alternate D

The final alternate CH-47C maintenance concept shown in Table XII is a modification of a Navy UH1E maintenance concept to an Army CH-47C application. TBO levels on dynamic components range from 2000 hours on the transmissions to 2400 hours on the engines. The inspection concept calls for a preflight inspection before each flight, a postflight after each flight, a daily inspection performed prior to the first flight of the day in conjunction with the preflight, and a calendar periodic inspection performed at 17-week intervals. This inspection concept, therefore, combines various elements of several of the previously defined maintenance concepts.

HLH MAINTENANCE CONCEPT

Each of the five maintenance concepts defined for the heavy-lift helicopter is basically similar to those previously discussed for the CH-47C helicopter. The variations between HLH maintenance concepts and those for the CH-47C are the look-phase maintenance time required to perform the various elemental inspections for the maintenance concepts. Tables XIII through XVII identify the scheduled inspection requirements for the various dynamic components of the HLH aircraft in the various maintenance concepts, and the duration and number of men required to perform the look-phase of the various inspection types. Therefore, rather than duplicate the previous discussion, Table XVIII has been developed to show the correlation between the CH-47C and HLH maintenance concepts. Table XVIII presents a method of utilizing these discussions and relating them to the maintenance concepts depicted in Tables XIII through XVII.

For all runs of the HLH comparative analysis, two 8-hour maintenance shifts have been employed. The personnel allocations for each shift, in terms of quantities and distribution, have been developed by Boeing Vertol Maintainability personnel. The specific personnel quantities by skill code employed in this analysis are shown below.

| Skill Code | Comparable Army Maintenance Nomenclature | Shift 1 Quantity | Shift 2 Quantity |
|------------|---|---------------------|---------------------|
| 01 | General Mechanic - Organizational | 13 | 11 |
| 02 | General Mechanic - Integrated Direct Support | 6 | 6 |

TABLE XII. CH-47C MAINTENANCE CONCEPT - ALTERNATE D (BASED ON USN UH-1E MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | | |
|--------------------------------|-------|---------------------|---|---|
| Component | TBO | Retirement Interval | | |
| Forward transmission | 2000 | N/A | | |
| Aft transmission | 2000 | N/A | | |
| Engine combining transmission | 2000 | N/A | | |
| Engine mechanical transmission | 2000 | N/A | | |
| Aft rotary wing drive shaft | 2000 | 4000 | | |
| Sync shaft assembly | 2400 | N/A | | |
| Sync shaft adapter | 2400 | N/A | | |
| Engine drive shaft assembly | 2400 | N/A | | |
| Forward rotary wing head | 2000 | N/A | | |
| Aft rotary wing head | 2000 | N/A | | |
| Forward swashplate assembly | 2000 | N/A | | |
| Aft swashplate assembly | 2000 | N/A | | |
| Forward rotor blades | N/A | 6000 | | |
| Aft rotor blades | N/A | 4000 | | |
| Engine | 2400 | N/A | | |
| B. Inspections | | | | |
| Type | Crew | Elapsed Time | When Accomplished | Description |
| (1) Preflight | 2 men | 20 min | Prior to each flight | This inspection is to verify proper servicing and to inspect for obvious defects |
| (2) Postflight | 2 men | 20 min | After each flight | This inspection required to determine obvious degradation that may have occurred during flight and required servicing |
| (3) Daily | 2 men | 60 min | Prior to the first flight of the day. No more than 72 hours may elapse between such accomplishment and the following flight. The accomplishment of these requirements immediately prior to flight shall satisfy the requirements of a pre-flight inspection | This inspection required to inspect for latent defects at a greater depth than performed in the preflight and postflight inspection; to determine degradation and to insure the aircraft is safe for flight |
| (4) Calendar periodic | 9 men | 10 hours | At 17-week intervals | These requirements are to inspect the aircraft for material degradation that may have occurred during the preceding calendar and to perform essential preventive maintenance |

TABLE XIII. BASIC HLH MAINTENANCE CONCEPT (BASED ON PROPOSED HLH MAINTENANCE CONCEPT)

| A. Scheduled Maintenance: None - All components are replaced "on condition". | | | | |
|--|-----------------------------------|---|---|---|
| B. Inspections | | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description | Rationale |
| (1) Flight Inspection Requirement Minimum (FIRM) | 2 men 15 min | After each flying day | Minimum safety-of-flight inspection which supplants present daily inspection. Only items directly related to safety-of-flight are considered | Incorporation of diagnostics and improved reliability eliminates the conventional daily inspection |
| (2) Ten-hour inspection | 2.5 men 4 hours | Each 10 flight hours in conjunction with the FIRM | Covers those areas previously included in the conventional daily inspection that are not classified as "flight critical" for the HLH | Reduce maintenance by extending the inspection interval of non-flight critical items. Anticipated frequency would be every other flying day based on a utilization rate of 4 hours per day |
| (3) Phased Periodic Inspection (PPI) | 2.5 men 8 hours for each phase | Progressive phases every 50 flight hours | The PPI will be divided into 12 phases, each of which will be performed every 50 flight hours. A full inspection cycle will be completed in 600 flight hours, at which time another cycle will be initiated | Significant state-of-the-art attainments affecting reliability and inspection methods will reduce the need for look-phase inspection and will substantially increase the interval between periodic inspections. The advantages in this concept are that the aircraft is removed from flight status for shorter periods of time during anticipated downtime periods, permitting efficient flight scheduling, improved personnel utilization and increased availability. Deferred maintenance accrual is attenuated, if not completely eliminated |

TABLE XIV. HLM MAINTENANCE CONCEPT - ALTERNATE A (BASED ON EXISTING CH-47C MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | | |
|----------------------------------|--------------|--------------|--|--|
| Component | TBO | | | |
| Forward rotor transmission | 1200 | | | |
| Combining transmission | 1200 | | | |
| Aft rotor transmission | 1200 | | | |
| Sync shafting (6 sections) | 2400 | | | |
| Slant shaft (2 sections) | 2400 | | | |
| Engine drive shafts (6 sections) | 2400 | | | |
| Forward rotor hub | 1200 | | | |
| Aft rotor hub | 1200 | | | |
| Forward rotor blades | on condition | | | |
| Aft rotor blades | on condition | | | |
| Forward swashplate | 1200 | | | |
| Aft swashplate | 1200 | | | |
| Engine | 500 | | | |
| B. Inspections | | | | |
| Type | Crew | Elapsed Time | When Accomplished | Description |
| (1) Daily | 2 men | 3.0 hours | After the last flight of the day or preceding the next days flight | Consists of visual examination and operational checks to determine that the aircraft can safely and efficiently perform its assigned mission |
| (2) Intermediate | 4 men | 4 hours | Every 25, 50 and 75 flying hours after completion of the periodic inspection | Provide verification of satisfactory functioning at frequencies between the daily and periodic inspections |
| (3) Periodic | 8 men | 8 hours | Every 100 flying hours | A comprehensive, thorough, and searching inspection of all items which are subject to adjustment, discrepancies, or failures |
| | | | | Scheduled inspections are required in order to assure that latent defects are discovered and corrected before malfunctioning or serious trouble result |
| | | | | Same as daily |
| | | | | Same as daily |

TABLE XV. H/LH MAINTENANCE CONCEPT - ALTERNATE B (BASED ON USN CH-46 MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | | |
|----------------------------------|---------------------|--|---|--|
| Component | TBO | | | |
| Forward rotor transmission | 1200 | | | |
| Combining transmission | 1200 | | | |
| Aft rotor transmission | 1200 | | | |
| Sync shafting (6 sections) | 2400 | | | |
| Slant shaft (2 sections) | 2400 | | | |
| Engine drive shafts (6 sections) | 2400 | | | |
| Forward rotor hub | 1200 | | | |
| Aft rotor hub | 1200 | | | |
| Forward rotor blades | on condition | | | |
| Aft rotor blades | on condition | | | |
| Forward swashplate | 1200 | | | |
| Aft swashplate | 1200 | | | |
| Engine | 2400 | | | |
| B. Inspections | | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description | Rationale |
| (1) Turnaround/servicing | 2 men 15 min | Prior to each flight and after last flight | Primarily, a visual inspection to determine obvious defects between flights, degradation that may have occurred during flight and the required servicing | Purpose of the turnaround inspection is to reduce downtime between flights. It contains the minimum requirements to insure the integrity of the aircraft for flight. |
| (2) Daily | 2 men 75 min | Prior to the first flight of the day | These requirements are to inspect for latent defects at a greater depth than performed in the turnaround | Purpose is to determine degradation and to insure the aircraft is safe for flight |
| (3) Calendar-periodic (airframe) | 10 men 15 hours | At 34-week intervals | A thorough and detailed inspection of the complete aircraft to inspect for material degradation that may have occurred during the preceding calendar period and to perform essential preventive maintenance | Calendar concept permits more efficient scheduling of aircraft operations and maintenance, thereby improving aircraft availability |

TABLE XVI. HUH MAINTENANCE CONCEPT - ALTERNATE C (BASED ON USAF H-3 MAINTENANCE CONCEPT)

| A. Scheduled Maintenance: None - All components are replaced "on condition". | | | |
|--|------------------------|------------------------------------|---|
| B. Inspections | | | |
| Type | Crew & Elapsed Time | When Accomplished | Description |
| (1) Preflight | 2 men 50 min | Prior to each flight of the day | Inspection consists of checking the helicopter for flight preparedness by performing visual examination and operational checks of certain components to assure no defects or maladjustments exist that could cause accidents or aborted missions |
| (2) Postflight | 2 men 30 min | After each flight | Inspection consists of checking the helicopter to determine if it is suitable for another flight by performing visual examination of certain components, areas or systems to assure no defects exist which would be detrimental to further flight |
| (3) Phased inspection | 3 men 4 hours | Every 100 flying hours | The complete inspection cycle for the weapon system is assumed to be 1200 hours. A portion of the total recurring inspection requirements is accomplished at each phased inspection. Certain items are considered basic phase requirements and will be accomplished in conjunction with each phase (100 flying hours) inspection. The inspection cycle will be repeated, starting with phase number one, 100 hours after completion of the 12th phased inspection. Included in each phased inspection are requirements for checking certain components, areas or systems of the helicopter to determine that no condition exists which, if not corrected, could result in failure or malfunction of the component prior to the next scheduled inspection |

TABLE XVII. HILH MAINTENANCE CONCEPT - ALTERNATE D (BASED ON USN UH-1E MAINTENANCE CONCEPT)

| A. Scheduled Maintenance | | | |
|----------------------------------|---------------------|--|---|
| Component | TBO | | |
| Forward rotor transmission | 2000 | | |
| Combining transmission | 2000 | | |
| Aft rotor transmission | 2000 | | |
| Sync shafting (6 sections) | 3000 | | |
| Slant shaft (2 sections) | 3000 | | |
| Engine drive shafts (6 sections) | 3000 | | |
| Forward rotor hub | 2000 | | |
| Aft rotor hub | 2000 | | |
| Forward rotor blades | on condition | | |
| Aft rotor blades | on condition | | |
| Forward swashplate | 2000 | | |
| Aft swashplate | 2000 | | |
| Engine | 2400 | | |
| B. Inspections | | | |
| Type | Crew & Elapsed time | When Accomplished | Description |
| (1) Preflight | 2 men 30 min | Prior to each flight | This inspection is to verify proper servicing and to inspect for obvious defects |
| (2) Postflight | 2 men 30 min | After each flight | This inspection required to determine obvious degradation that may have occurred during flight, and required servicing. |
| (3) Daily | 2 men 70 min | Prior to the first flight of the day. No more than 72 hours may elapse between such accomplishment and the following flight. The accomplishment of these requirements immediately prior to flight shall satisfy the requirements of a preflight inspection | This inspection required to inspect for latent defects at a greater depth than performed in the preflight or postflight inspections; to determine degradation and to insure the aircraft is safe for flight |
| (4) Calendar periodic | 10 men 12 hours | At 17-week intervals | These requirements are to inspect the aircraft for material degradation that may have occurred during the preceding calendar and to perform essential preventive maintenance |

**TABLE XVIII. RELATIONSHIP OF CH-47C MAINTENANCE CONCEPTS
TO HLH MAINTENANCE CONCEPTS**

| CH-47C Maintenance Concept | Analagous HLH Maintenance Concept |
|---------------------------------------|--|
| Basic (Current CH-47C) | Alternate A (Proposed HLH) |
| Alternate A (Proposed HLH) | Basic (Current CH-47C) |
| Alternate B (USN CH-46) | Alternate B (USN CH-46) |
| Alternate C (USAF H-3) | Alternate C (USAF H-3) |
| Alternate D (USN UH-1E) | Alternate D (USN UH-1E) |

Conclusion

The CH-47C and HLH maintenance concepts are discussed further in a subsequent section of the report, dealing with the comparative analysis of these various missions and maintenance concepts. The various maintenance concepts and missions selected for comparative analysis coded in GPSS for inclusion in the model are presented in Appendix II.

MODEL VALIDATION

INTRODUCTION

There are two fundamental approaches employed in validating a simulation model--first, employ the model to simulate a system operation, and operate the actual system in its real environment and evaluate the comparable predicted versus achieved results. Although this is the most rigorous proof of model validity, it is generally too expensive to employ on large, complex simulations such as the R&M model. Furthermore, it is impossible in the case of the HLH, since this is a conceptual aircraft.

The second method of validation is to construct a relatively limited mathematical model which identifies the significant system interactions and can, therefore, be used to make predictions of system performance against which the simulated results can be compared. The major problem encountered employing this approach toward validating the R&M model is that there has been little success in developing a deterministic model which has adequately considered the significant interactions involved in the operations and maintenance of an aircraft fleet.

Thus, it has been necessary to employ a different approach to model validation in this analysis. The primary elements of model validation as employed in this study are the calculation of expected values for those parameters which are essentially independent stochastic variables and the identification of trends generated by parametric sensitivity analyses.

One of the major problems in calculating expected values for parameters of the R&M simulation model is the extreme difficulty of estimating the impact of queuing upon parametric values. Thus, to minimize queuing (and consequently its impact), essentially unlimited spares and personnel were employed for the initial baseline validation runs. When it was concluded that the model output was acceptably correlated to the expected values in this unlimited case, the storage definitions were redefined to impose the restriction of a true TO&E upon the model operation. Various sensitivity runs were then made to ensure that the model response to parametric input variations was not counter-intuitive. Finally, the comparative analyses performed for the various mission/maintenance concept combinations provided further reinforcement of the validity and flexibility of the basic model logic.

BURN-IN ANALYSIS

Evaluating model achievement of stability is a process unique to each simulation model and its intended application. That is, a system has achieved a homeostatic condition when the major parameters by which the system performance is measured have reached a morphologically unchanging state.

The time it takes to reach this homeostatic state for the R&M simulation model is functionally dependent upon the number of transactions endogenous to the model. With the HLH and CH-47C models, the platoon size, monthly utilization, and maintenance action rates for the baseline scenarios are of sufficient magnitude to ensure stable operation in a 56-day simulation. Furthermore, stability is monitored in terms of the primary measures of effectiveness for this analysis which are availability (UPTIME/TOTAL TIME) and mission completion ratio (MISSIONS FLOWN/MISSIONS SCHEDULED). Table XIX shows several of the pertinent output parameters generated for the HLH over various simulated durations. Tables XX, XXI, and XXII display the output statistics generated for various time frames of simulated CH-47C operation, with various levels of maintenance personnel support.

Figure 9 shows the effect of run duration upon availability for the various burn-in runs that were made. These data support the conclusion that 56 days is adequate for the HLH and CH-47C baseline models.

It should be noted, however, that if future analysis were to consist of a significantly lower number of transactions or different (more refined) measures of effectiveness, the 56-day run duration might not be adequate to generate stable and, thus, statistically significant, results.

MODEL VALIDATION - HLH

Table XXIII identifies the expected values and baseline output statistics for 17 selected output parameters. A review of the output statistics shows an intuitively acceptable relationship between the quantitative values generated by the baseline model and the expected values. Furthermore, it can be seen that the distribution of error appears to be random with 59 percent of the output statistics greater than expected and 41 percent of the statistics less than or equal to expected.

Thus, the baseline model fulfills the first criterion of validation employed in this analysis; namely, morphological equivalence between output and expected statistics.

TABLE XIX. HLH BURN-IN ANALYSIS
(Standard 36 Man TOE)

| OUTPUT PARAMETERS | RUN DURATION - MONTHS | | | |
|--|-----------------------|--------|--------|--------|
| | 1 | 2 | 3 | 5 |
| TOTAL NUMBER OF MISSIONS FLOWN | 120 | 244 | 492 | 736 |
| TOTAL NUMBER OF MISSIONS CALLED | 126 | 252 | 504 | 756 |
| TOTAL UTILIZATION* | 240 | 488 | 984 | 1472 |
| TOTAL NUMBER OF DAILY INSP. | 95 | 185 | 294 | 555 |
| TOTAL NUMBER OF PMI INSP. | 24 | 45 | 88 | 129 |
| TOTAL NUMBER OF PMP INSP. | 4 | 11 | 20 | 30 |
| TOTAL DAILY MMH | 57.0 | 111.0 | 176.4 | 330.0 |
| TOTAL PMI MMH | 240.0 | 450.0 | 880.0 | 1290.0 |
| TOTAL PMP MMH | 80.0 | 220.0 | 400.0 | 600.0 |
| TOTAL UNS MAINT ACTIONS | 270 | 566 | 987 | 1559 |
| TOTAL UNS MMH | 1321.5 | 2226.0 | 3971.0 | 6367.5 |
| TOTAL SCH MMH | 377.0 | 781.0 | 1456.4 | 2223.0 |
| TOTAL UNS EMT | 357.7 | 600.3 | 1186.4 | 1780.8 |
| TOTAL SCH EMT | 250.1 | 484.5 | 1011.9 | 1471.2 |
| TOTAL MMH/FH | 6.74 | 5.82 | 5.25 | 5.56 |
| NORM DELAY | 607.8 | 1084.8 | 2198.3 | 3258.0 |
| TOTAL AIR ABORTS | 4 | 6 | 12 | 15 |
| # MAINT ACTIONS - INFLT. ABORT | 4 | 6 | 14 | 16 |
| # MAINT ACTIONS INFLT. | 14 | 30 | 41 | 77 |
| # MAINT ACTIONS DURING PMI | 148 | 265 | 470 | 719 |
| # MAINT ACTIONS AT DAILY | 30 | 58 | 103 | 174 |
| # MAINT ACTIONS AT PMP | 74 | 207 | 359 | 573 |
| MAHF/FH | 1.12 | 1.16 | 1.00 | 1.02 |
| AVAILABILITY | 79.9 | 82.06 | 81.85 | 82.05 |
| *Total Mission Flight Hours Excluding Test Hops and Aborted Missions | | | | |

TABLE XX. CH-47 BURN-IN ANALYSIS
(UNLIMITED MEN)

| OUTPUT PARAMETERS | RUN DURATION - MONTHS | | | | |
|---------------------------------|-----------------------|-----------|---------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 |
| TOTAL NUMBER OF MISSIONS FLOWN | 702 | 1391 | 2092 | 2802 | 3492 |
| TOTAL NUMBER OF MISSIONS CALLED | 756 | 1512 | 2268 | 3024 | 3780 |
| TOTAL UTILIZATION | 1053 | 2086.5 | 3138.0 | 4201.0 | 5238.0 |
| TOTAL NUMBER OF DAILY INSP | 289 | 577 | 868 | 1159 | 1440 |
| TOTAL NUMBER OF PMI INSP | 35 | 72 | 103 | 133 | 170 |
| TOTAL NUMBER OF PMP INSP | 13 | 20 | 33 | 45 | 56 |
| TOTAL DAILY MMH | 1387.2 | 2769.6 | 4166.4 | 5563.2 | 6912.0 |
| TOTAL PMI MMH | 416.5 | 856.90 | 1225.7 | 1582.7 | 2023.0 |
| TOTAL PMP MMH | 585.0 | 900.00 | 1485.0 | 2025.0 | 2520.0 |
| TOTAL UNS MAINT ACTIONS | 1966 | 3458 | 5303 | 7045 | 8761 |
| TOTAL UNS MMH | 2514.65 | 4463.99 | 6983.74 | 9536.68 | 11811.05 |
| TOTAL SCH MMH | 2946.88 | 4599.01 | 7130.32 | 9458.55 | 11618.13 |
| TOTAL UNS EMT | 981.0 | 1948.8 | 2906.3 | 3972.1 | 4865.7 |
| TOTAL SCH EMT | 320.5 | 594.8 | 898.3 | 1205.7 | 1502.7 |
| TOTAL MMH/FH | 5.18 | 4.34 | 4.50 | 4.50 | 4.47 |
| NORM DELAY | 1301.5 | 2543.6 | 3804.6 | 5177.8 | 6368.4 |
| TOTAL AIR ABORTS | 31 | 72 | 105 | 126 | 164 |
| # MAINT ACTIONS - INFLT ABORT | 31 | DATA | 110 | 132 | 171 |
| # MAINT ACTIONS INFLT | 47 | NOT | 120 | 156 | 202 |
| # MAINT ACTIONS DURING PMI | 242 | AVAILABLE | 688 | 891 | 1130 |
| # MAINT ACTIONS AT DAILY | 655 | | 1934 | 2611 | 3303 |
| # MAINT ACTIONS AT PMP | 991 | | 2391 | 3255 | 3955 |
| MAIF/FH | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 |
| AVAILABILITY | 87.89 | 88.17 | 88.20 | 87.96 | 88.15 |

TABLE XXI. CH-47C BURN-IN ANALYSIS
(108 MAN TOE)

| OUTPUT PARAMETERS | RUN DURATION - MONTHS | | | | |
|----------------------------------|-----------------------|---------|---------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 |
| TOTAL NUMBER OF MISSIONS FLOWN | 679 | 1347 | 2022 | 269C | 3359 |
| TOTAL NUMBER OF MISSIONS CALLED | 756 | 1512 | 2268 | 3024 | 3780 |
| TOTAL UTILIZATION | 1018.5 | 2020.5 | 3033.0 | 4035.0 | 5038.5 |
| TOTAL NUMBER OF DAILY INSP | 278 | 569 | 828 | 1122 | 1397 |
| TOTAL NUMBER OF PMI INSP | 32 | 65 | 97 | 127 | 160 |
| TOTAL NUMBER OF PMP INSP | 14 | 20 | 33 | 44 | 52 |
| TOTAL DAILY MMH | 1334.40 | 2731.20 | 3974.4 | 5385.6 | 6705.6 |
| TOTAL PMI MMH | 380.8 | 773.5 | 1154.3 | 1511.3 | 1904.0 |
| TOTAL PMP MMH | 630.0 | 900.0 | 1485.0 | 1980.0 | 2340.0 |
| TOTAL UNS MAINT ACTIONS | 1993 | 3325 | 5086 | 6573 | 8296 |
| TOTAL UNS MMH | 2474.14 | 4380.47 | 6920.42 | 9030.59 | 11353.03 |
| TOTAL SCH MMH | 2793.45 | 4461.00 | 6809.00 | 9216.00 | 11183.00 |
| TOTAL UNS EMT | 2001.0 | 4136.9 | 6563.2 | 8614.0 | 10885.2 |
| TOTAL SCH EMT | 389.3 | 678.0 | 1082.4 | 1351.2 | 1645.4 |
| TOTAL MMH/FH | 5.17 | 4.38 | 4.53 | 4.52 | 4.38 |
| NORM DELAY | | | | | |
| TOTAL AIR ABORTS | 2390.3 | 4834.9 | 7645.6 | 9965.2 | 12530.6 |
| | 31 | 71 | 101 | 139 | 178 |
| # MAINT ACTIONS - INFLIGHT ABORT | | | | | |
| # MAINT ACTIONS INFLT | 31 | 71 | 103 | 141 | 180 |
| # MAINT ACTIONS DURING PMI | 41 | 86 | 136 | 177 | 226 |
| # MAINT ACTIONS AT DAILY | 214 | 440 | 629 | 837 | 1051 |
| # MAINT ACTIONS AT PMP | 679 | 1308 | 1964 | 2581 | 3295 |
| | 1028 | 1420 | 2254 | 2837 | 3544 |
| MAIF/FH | 1.8 | 1.7 | 1.7 | 1.6 | 1.6 |
| AVAILABILITY | 77.76 | 77.51 | 76.29 | 76.82 | 76.69 |

TABLE XXII. CH-47 BURN-IN ANALYSIS
(STANDARD TOE - 64 MEN)

| OUTPUT PARAMETERS | R U N D U R A T I O N - M O N T H S | | | | |
|---------------------------------|-------------------------------------|---------|---------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 |
| TOTAL NUMBER OF MISSIONS FLOWN | 677 | 1342 | 2010 | 2678 | 3331 |
| TOTAL NUMBER OF MISSIONS CALLED | 756 | 1512 | 2268 | 3024 | 3780 |
| TOTAL UTILIZATION | 1015.5 | 2051.5 | 3082.9 | 4107.9 | 5115.4 |
| TOTAL NUMBER OF DAILY INSP | 277 | 527 | 780 | 1053 | 1283 |
| TOTAL NUMBER OF PMI INSP | 34 | 65 | 94 | 128 | 158 |
| TOTAL NUMBER OF PMP INSP | 11 | 19 | 33 | 42 | 52 |
| TOTAL DAILY MMH | 1329.6 | 2529.6 | 3744.0 | 5054.4 | 6158.4 |
| TOTAL PMI MMH | 404.6 | 773.5 | 1118.6 | 1523.2 | 1880.2 |
| TOTAL PMP MMH | 495.0 | 855.0 | 1485.0 | 1890.0 | 2340.0 |
| TOTAL UNS MAINT ACTIONS | 1675 | 3137 | 4981 | 6415 | 7961 |
| TOTAL UNS MMH | 2107.03 | 4194.23 | 6771.26 | 8702.35 | 11008.81 |
| TOTAL SCH MMH | 2660.75 | 4563.62 | 6795.27 | 8682.01 | 10537.69 |
| TOTAL UNS EMT | 2196.8 | 5348.2 | 8361.4 | 10696.9 | 14570.4 |
| TOTAL SCH EMT | 325.6 | 682.8 | 1077.4 | 1435.9 | 1711.8 |
| TOTAL MMH/FH | 4.51 | 4.19 | 4.31 | 4.15 | 4.13 |
| NORM DELAY | 2522.4 | 6031.0 | 9438.8 | 12132.8 | 16282.2 |
| TOTAL AIR ABORTS | 33 | 55 | 98 | 125 | 170 |
| * MAINT ACTIONS - INFLT ABORT | 34 | 57 | 101 | 135 | 175 |
| * MAINT ACTIONS INFLT | 48 | 95 | 138 | 191 | 239 |
| * MAINT ACTIONS DURING PMI | 202 | 431 | 631 | 849 | 1044 |
| * MAINT ACTIONS AT DAILY | 631 | 1191 | 1790 | 2336 | 2849 |
| * MAINT ACTIONS AT PMP | 760 | 1363 | 2321 | 2904 | 3654 |
| MALE/FH | 1.65 | 1.53 | 1.62 | 1.56 | 1.56 |
| AVAILABILITY | 76.54 | 71.95 | 70.73 | 71.78 | 69.71 |

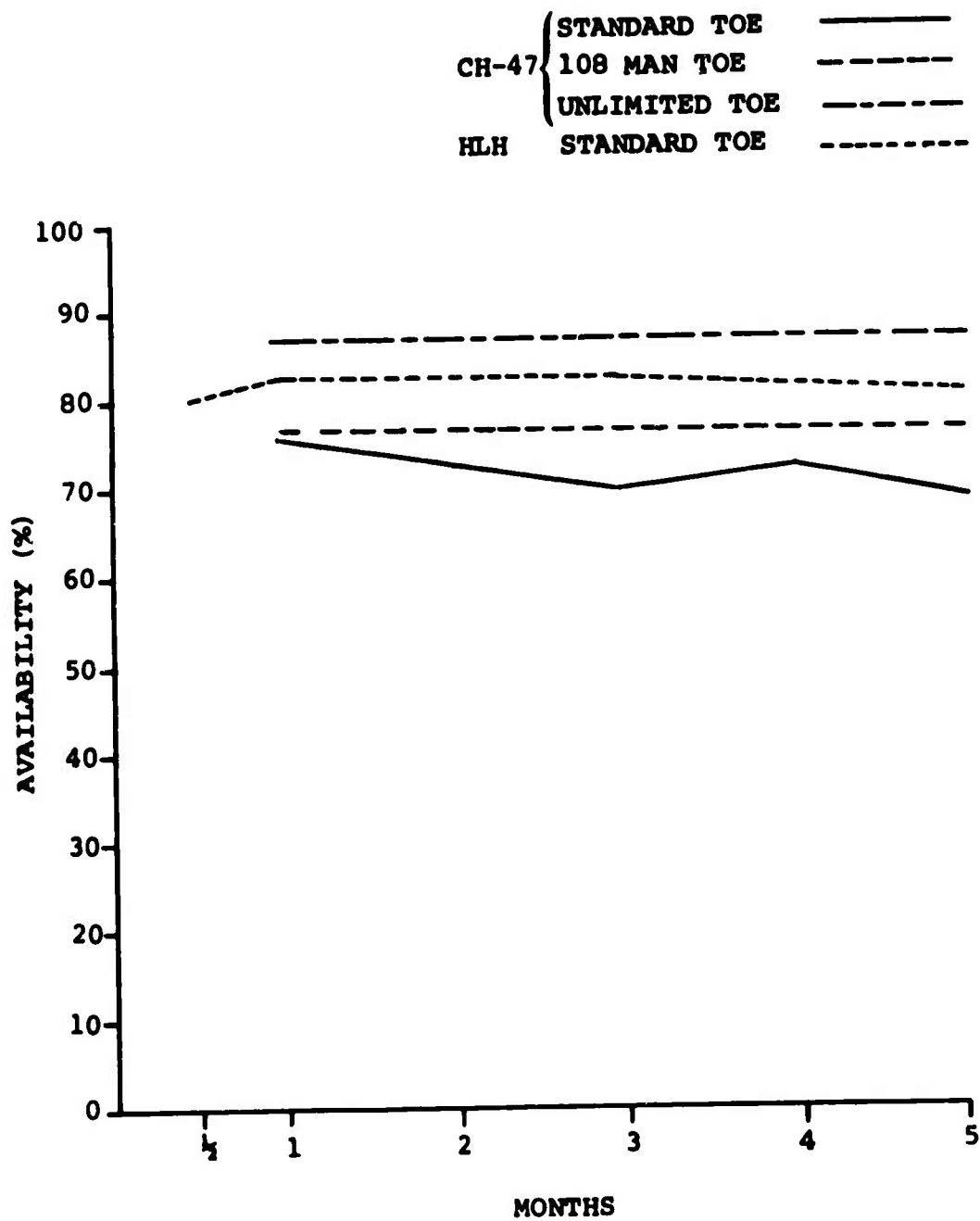


Figure 9. Impact of Run Duration on Availability.

TABLE XXIII. HLF VALIDATION ANALYSIS

| <u>OUTPUT PARAMETERS</u> | <u>EXPECTED VALUES</u> | <u>BASELINE OUTPUT</u> |
|--|------------------------|------------------------|
| Total number of missions demanded | 504 | 504 |
| Total number of missions completed | 494 | 495 |
| Total utilization | 988 | 990 |
| Total number of daily inspection | less than 504 | 348 |
| Total number of PMI inspection | 80 | 85 |
| Total number of PMP inspection | 20 | 23 |
| Total daily MMH | less than 302.4 | 208.8 |
| Total PMI MMH | 800 | 850 |
| Total PMP MMH | 400 | 460 |
| Total unscheduled maintenance actions | 1038 | 1070 |
| Total scheduled MMH | 1502.4 | 1518.8 |
| Total air aborts | 10 | 9 |
| No. Maintenance actions inflight abort | 49 | 46 |
| No. Maintenance actions during PMI | 480 | 460 |
| No. Maintenance actions at daily | less than 151 | 130 |
| No. Maintenance actions at PMP | 400 | 425 |
| Malfunctions per Flight Hour | 1.05 | 1.08 |

HLH SENSITIVITY ANALYSIS

The second step in validating the HLH model is to ensure that the model responds to parametric changes in an intuitively acceptable way. The data generated during this analysis is contained in Appendix I. This section identifies several of the trends displayed by this data and discusses their content and implications.

Figure 10 relates the platoon availability (UPTIME/TOTAL TIME) to the unscheduled maintenance action rate. Generally, the relationship between the data and the trend line is quite acceptable. There is however a notable exception identified with ① on the plot.

A review of the data which generated Figure 10 shows that the outlying point is justifiable in an analytical sense. The reason for this excursion is that the point 1 plotted at 67.09-percent availability is a result of the evaluation of model sensitivity to variations in platoon size. Specifically, this point is representative of a platoon size of 3 aircraft attempting to fly the baseline mission normally flown by a platoon of 11 aircraft.

The data plotted in Figure 11, relating direct maintenance man-hours/flight hour to unscheduled maintenance action rate and Figure 12, which shows availability as a function of TOE size, compares quite well to the plotted trends. Since these trends are of the shape generally displayed in the literature, no further discussion of these data appears necessary.

Finally then, it appears, based on the comparison of the baseline results with the expected values and the results of the sensitivity analysis, that the HLH R&M simulation model is, in fact, a valid representation of actual operations and maintenance environments it purports to depict.

MODEL VALIDATION - CH-47C

Table XXIV identifies the expected values and baseline results for 17 selected output parameters. A review of the results versus the parametric expected values confirms the statistical equivalence of results. Furthermore, the distribution of error for the 17 parameters for which expected values could be calculated appears to be random with 44 percent of the deviation positive, and 56 percent of the deviations zero or negative. Thus, it would appear that the CH-47C model passes the first step of validation as defined in this report; namely, the morphological equivalence of model results and expected results.

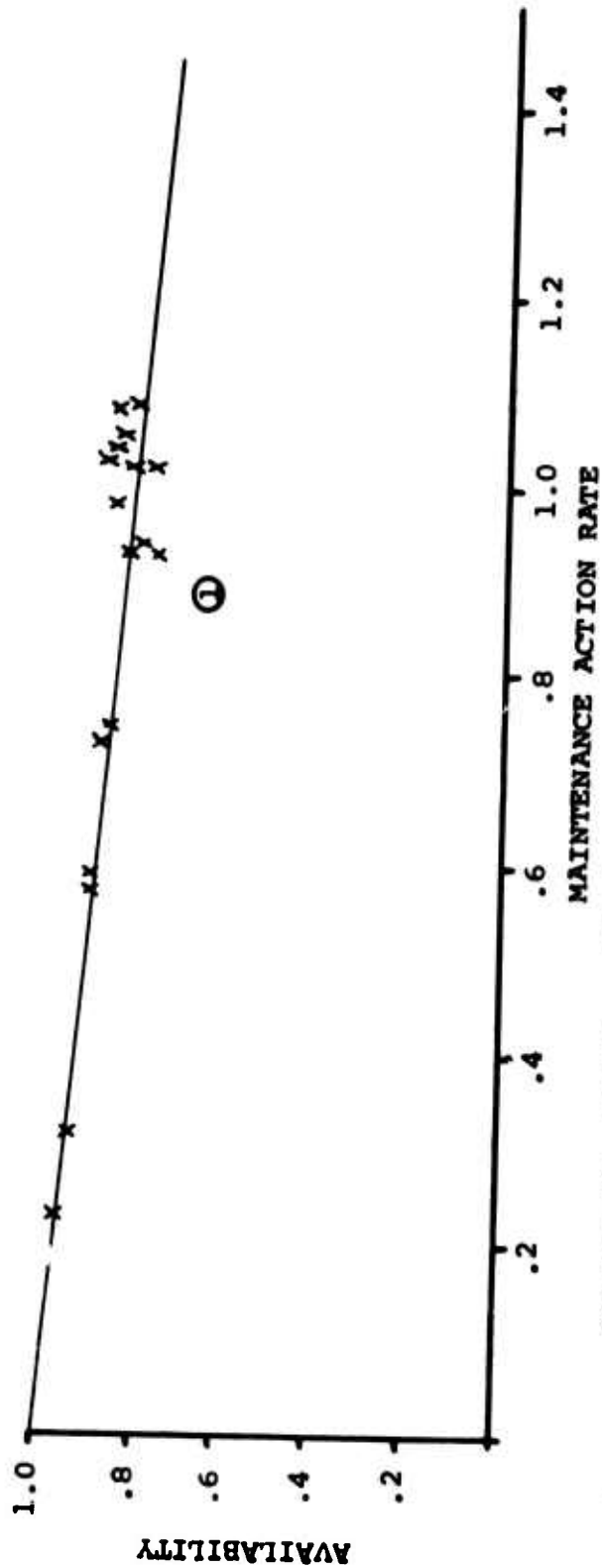


Figure 10. HLH Sensitivity Analyses - Availability Variations.

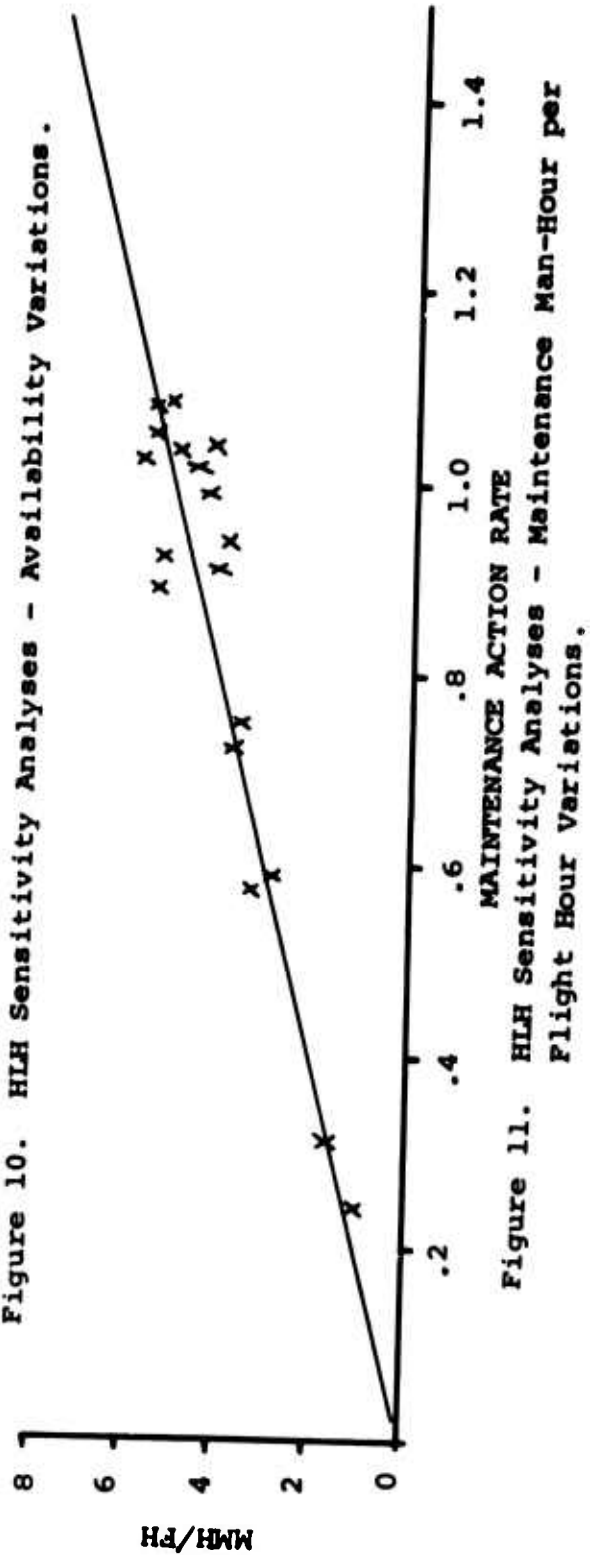


Figure 11. HLH Sensitivity Analyses - Maintenance Man-Hour per Flight Hour Variations.

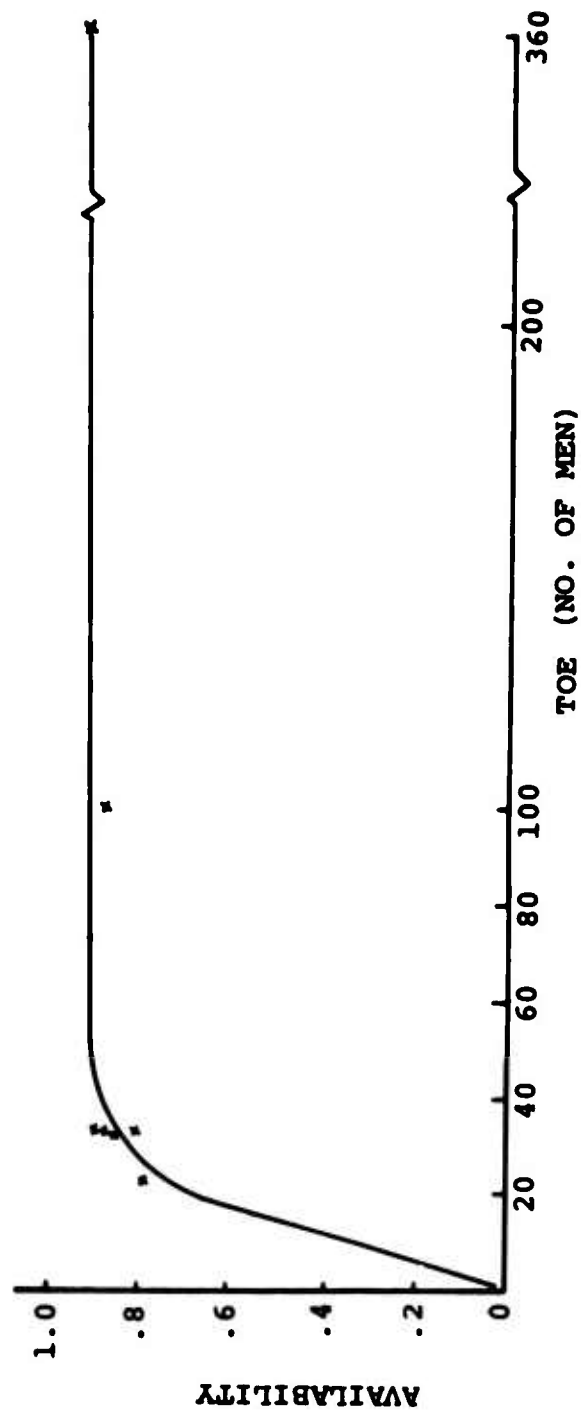


Figure 12. HLH Sensitivity Analyses - Impact of TOE Size Upon Availability.

TABLE XXIV. CH-47C VALIDATION ANALYSIS

| <u>OUTPUT PARAMETERS</u> | <u>EXPECTED VALUES</u> | <u>BASELINE OUTPUT</u> |
|--|------------------------|------------------------|
| Total number of missions demanded | 1512 | 1512 |
| Total number of missions completed | 1426 | 1372 |
| Total utilization | 2139 | 2058.0 |
| Total number of daily inspection | less than 896 | 680 |
| Total number of PMI inspection | 66 | 69 |
| Total number of PMP inspection | 22 | 20 |
| Total daily MMH | less than 4300 | 3264 |
| Total PMI MMH | 785.4 | 821.1 |
| Total PMP MMH | 990 | 900.0 |
| Total unscheduled maintenance actions | 2888 | 2920 |
| Total air aborts | 65 | 66 |
| No. Maintenance actions inflight abort | 65 | 66 |
| No. Maintenance actions inflight | 92 | 95 |
| No. Maintenance actions during PMI | 442 | 473 |
| No. Maintenance actions at daily | less than 1526 | 853 |
| No. Maintenance actions at PMP | 1474 | 1433 |
| Malfunctions per Flight Hour | 1.35 | 1.42 |

CH-47C SENSITIVITY ANALYSES

The second step in validating the CH-47C model is to perform several trend analyses which will demonstrate that the model responds to parametric variations in an intuitively acceptable manner.

Figures 13 and 14 show the impact of changes in maintenance action rate upon platoon availability and maintenance man-hours per flight hour, respectively. In both of these figures, there are two distinctly different populations. These populations exhibit the impact of NORS delay upon availability and maintenance man-hours per flight hour. It is obvious that availability must decrease when NORS delays are possible. It is not obvious that maintenance man-hours per flight hour should decrease when NORS delays are encountered. However, after careful review of the data, it is found that the MMH/FH decreases where NORS delays are encountered because less maintenance is being generated, due to the restricted platoon utilization. This is primarily due to the reduced number of periodic inspections encountered during situations of lower utilization. It can be seen, therefore, that the model responds in an intuitively acceptable manner for those cases presented.

This proper response of the model to parametric changes, when combined with the previously discussed statistical equivalence of model results with expected values, constitutes the validation of the CH-47C R&M model.

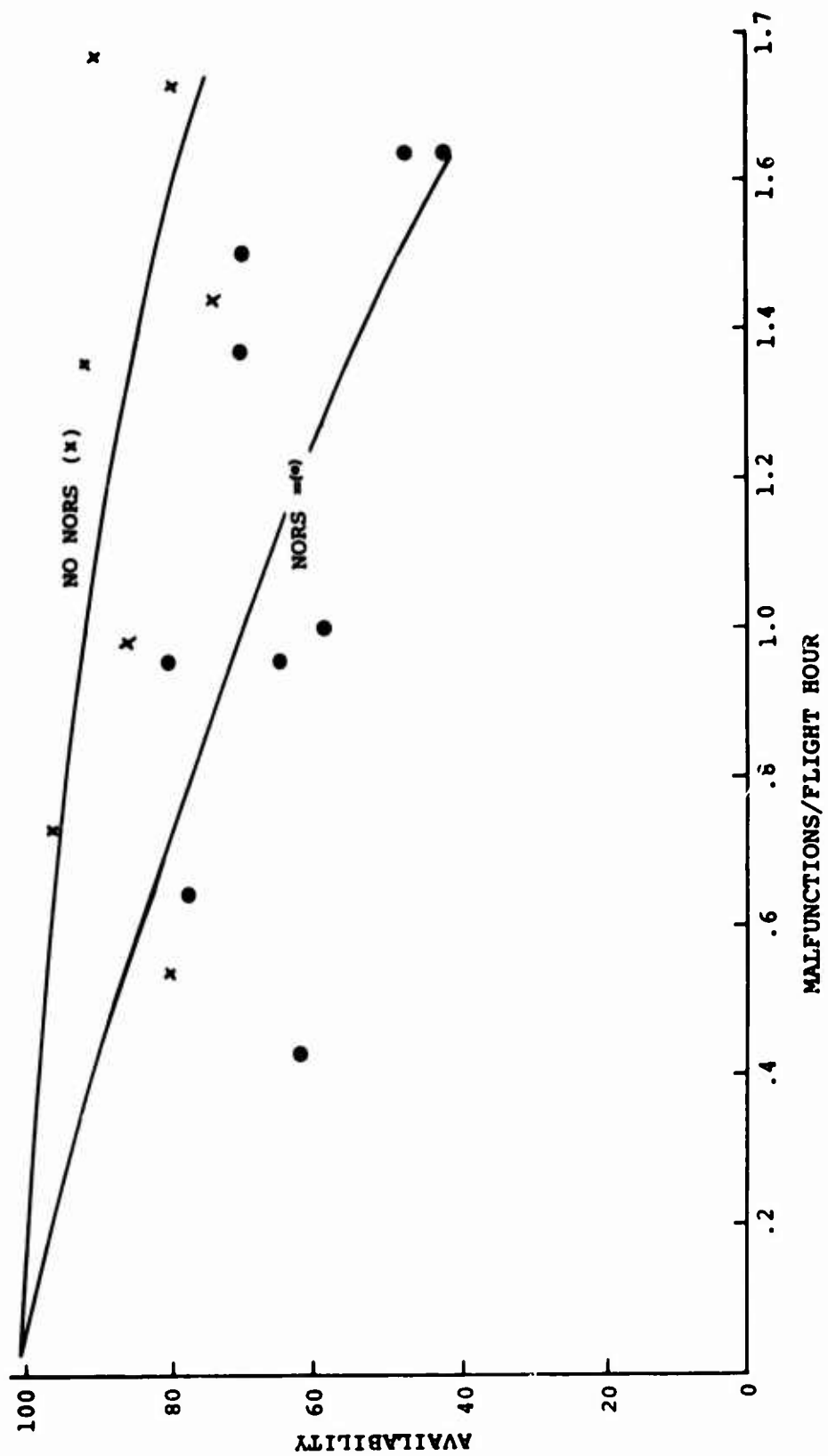
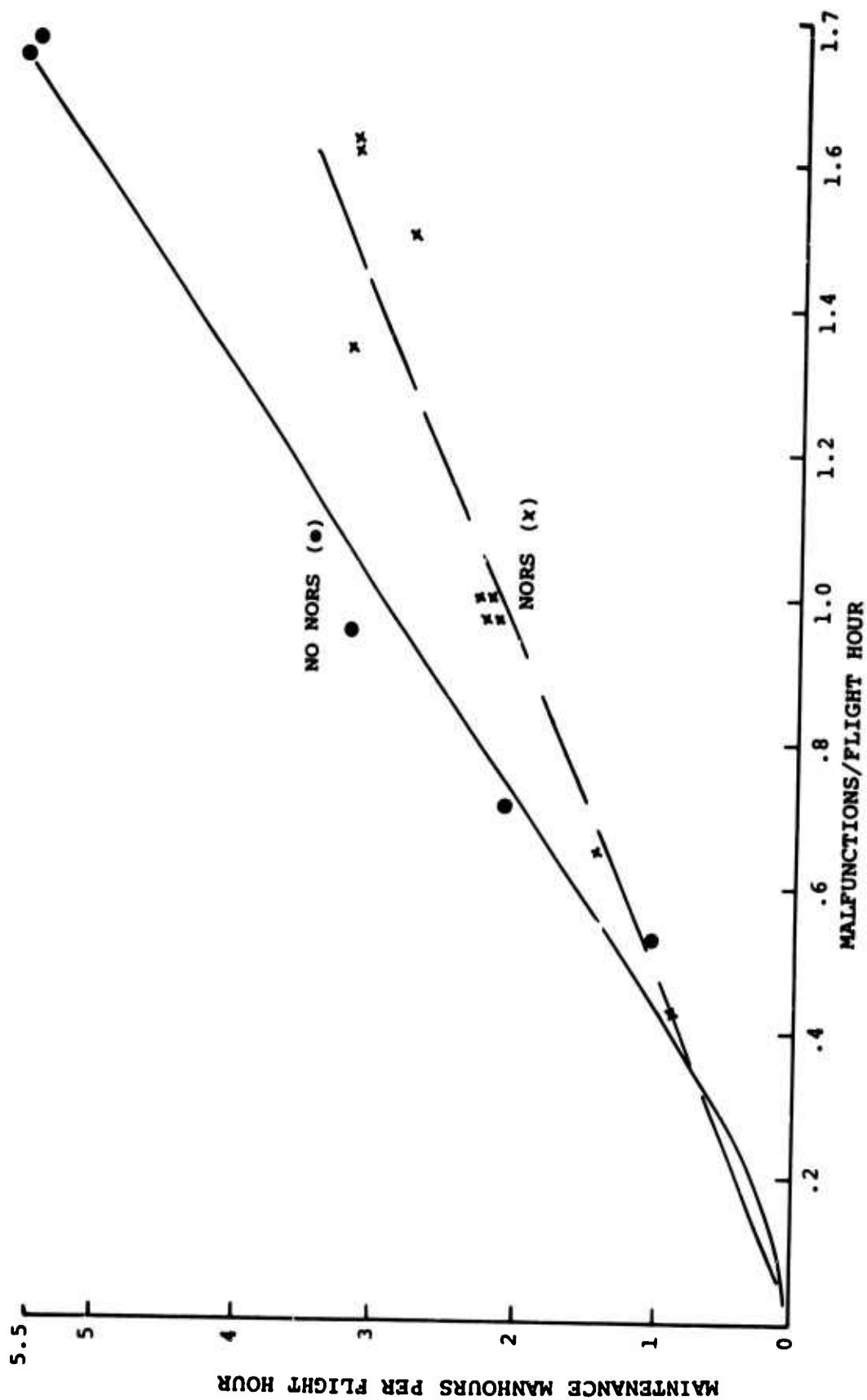


Figure 13. CH-47C Sensitivity Analysis - Availability as a Function of Malfunction Rate.



COMPARATIVE ANALYSIS

INTRODUCTION

In order to demonstrate model validity and flexibility, an analysis was performed, comparing various maintenance concepts over various mission profiles. It was the main intention of this exercise to demonstrate model validity through a simulated maintenance analysis, not to perform a rigorous analysis of each of the maintenance support plan capabilities. As such, the results of these analyses should be considered indicative of the relative merits of each concept, rather than absolute statements of the quantitative differences between the various alternate maintenance concepts.

COMPARATIVE RESULTS

CH-47C

Appendix III contains the results of the twenty cases run during the CH-47C comparative analysis. Table XXV shows the sequence in which the simulations took place.

Figures 15 through 17 identify the types of information that can be extracted from the data contained in Appendix III for the CH-47C.

In preparing the inputs for the various comparative analyses, it is usually necessary to reestimate the occurrence probabilities and maintenance action distributions for the various decision locations within the model. In doing this it is recommended that the method previously discussed in the HLH R&M data section of this report be used.

Whenever the mission/maintenance concept variation is significantly different from the baseline, it may be difficult to estimate the achievable utilization. This is especially the case for surge missions with limited TOE's. Thus, the estimated distribution of inspections, and consequently the maintenance distribution and MALF/FH, rate may not occur as anticipated. In these situations, the alternatives are to redistribute the maintenance actions and rerun the case or to modify the output using a method which will transform the output statistics to a common malfunction rate.

HLH

The results of the 20 cases run during the HLH comparative analysis are contained in Appendix III. Table XXVI identifies the general sequence in which these runs were made. The

| TABLE XXV. SELECTION OF CH-47C ALTERNATE MISSIONS AND MAINTENANCE CONCEPTS | | | | | |
|---|--|------------------|---------------|---------------------------|-------------------------|
| Missions | | Logistic Support | CONUS Minimum | Ft. Rucker Lead-The-Fleet | Combat Support Baseline |
| Maintenance Concepts | | 180 Hrs/Month | 30 Hrs/Month | 100 Hrs/Month | 54 Hrs/Month |
| Basic Baseline Daily - End of day PMI - Every 25 hrs PMP - Every 100 hrs 1200-2400 hr TBO's | | 2 | 4 | 3 | 1 |
| Alternate A Firm - After each day 10 hr inspection Phased PMP On condition | | 6 | 14 | 13 | 5 |
| Alternate B Turnaround - After each flight Daily - Prior to first flight Calendar - Every 34 weeks 1200-2400 hr TBO's | | 10 | 16 | 15 | 7 |
| Alternate C Preflight - Prior to first flight Postflight - After each flight Phased PMP - 100 hr intervals On condition | | 9 | 17 | 18 | 8 |
| Alternate D Preflight Postflight Daily Calendar - 17 week intervals | | 12 | 20 | 19 | 11 |

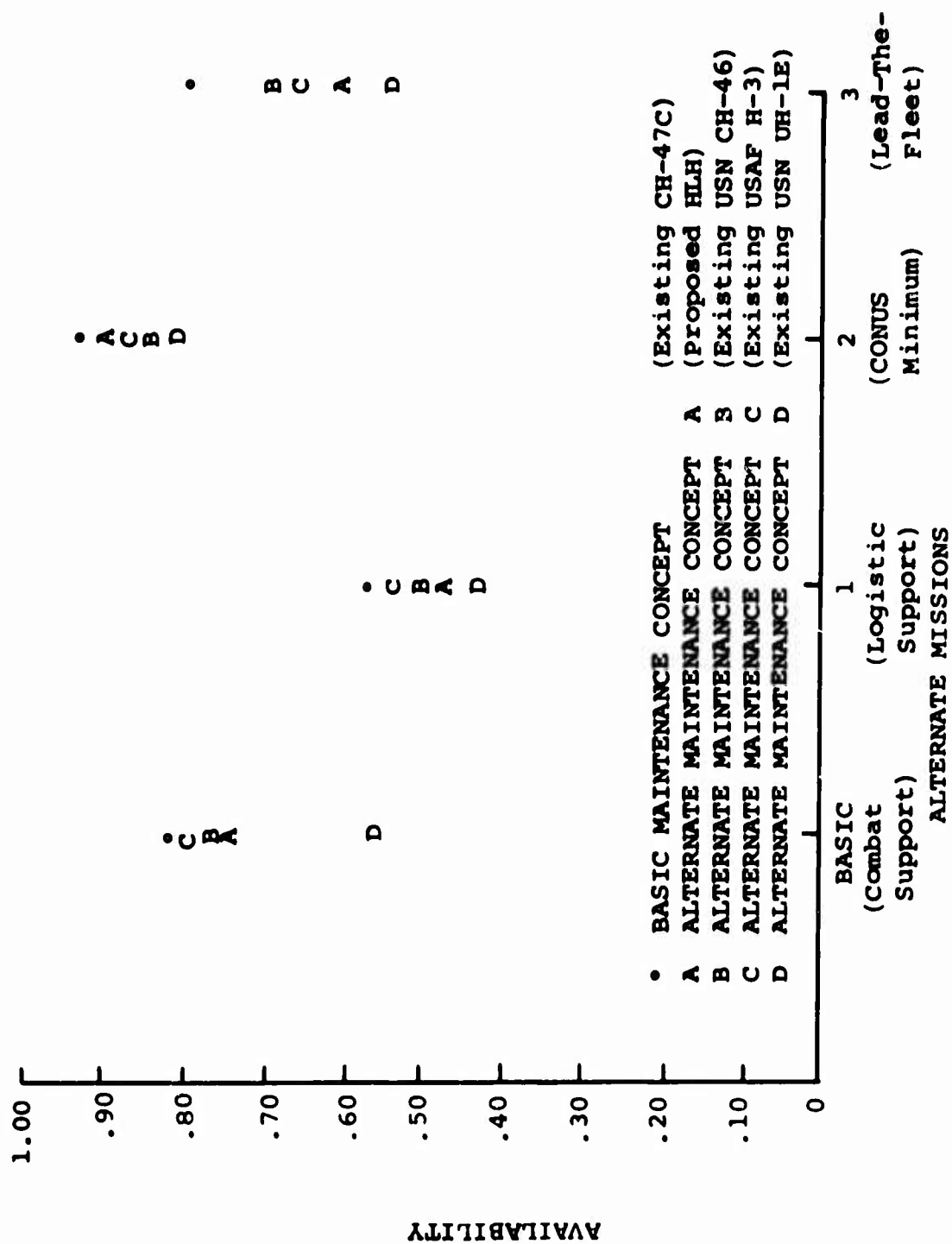


Figure 15. CH-47C Comparative Analysis - Availability Variations.

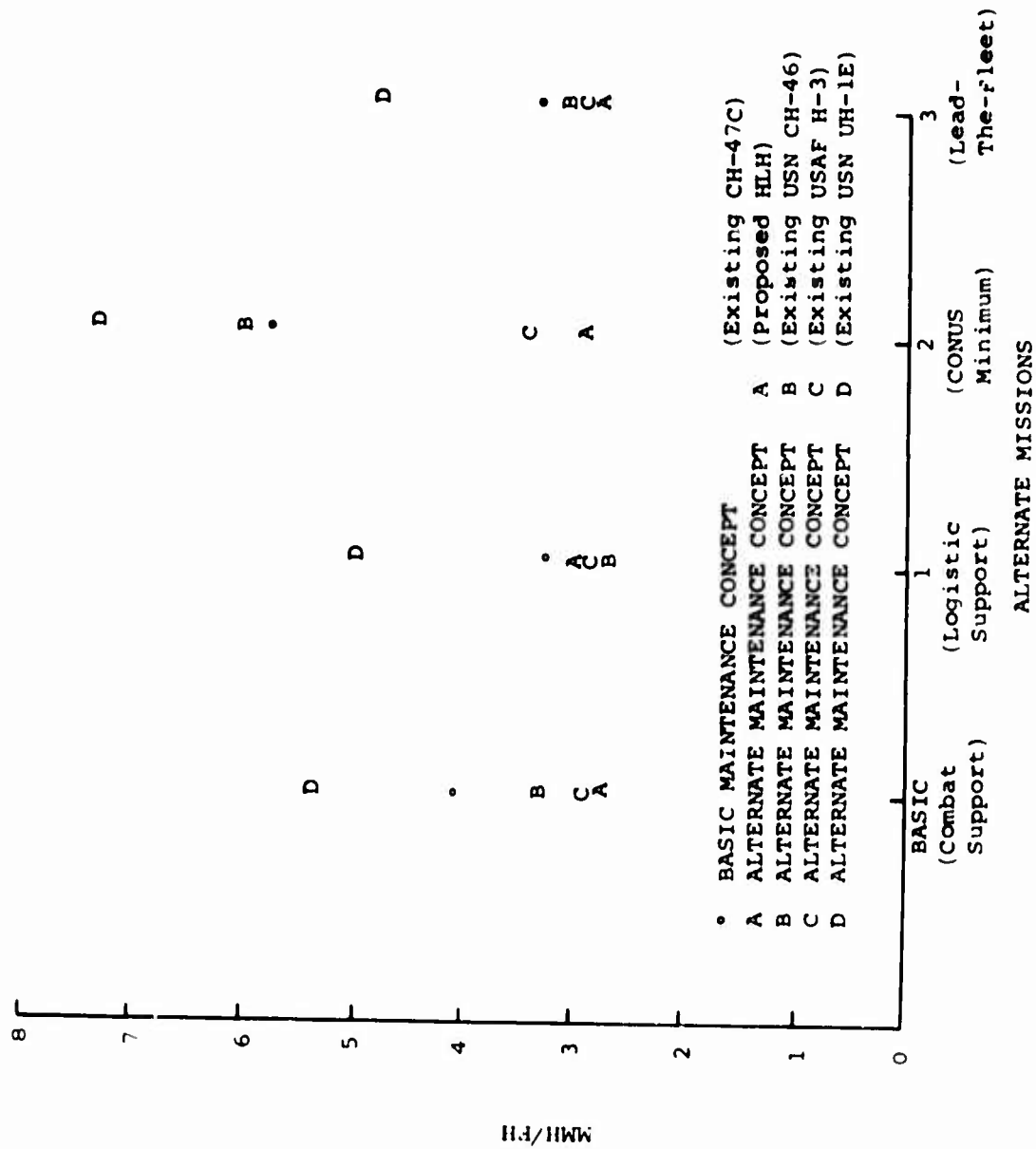


Figure 16. CH-47C Comparative Analysis - Maintenance Man-Hour per Flight-Hour Variations

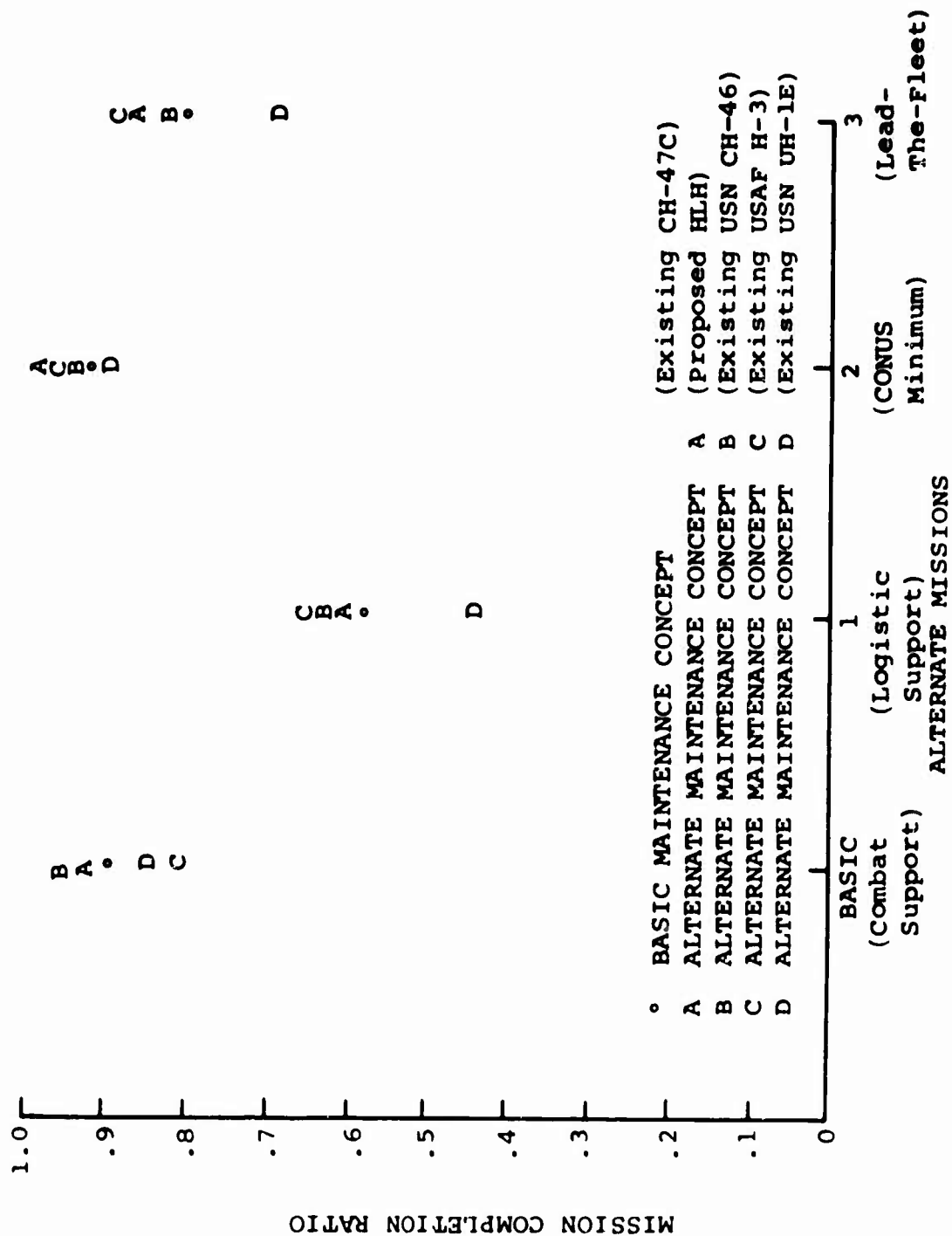


Figure 17. CH-47C Comparative Analysis - Mission Completion Ratio Variations.

| TABLE XXVI. SELECTION OF HLH ALTERNATE MISSIONS AND MAINTENANCE CONCEPTS | | | | | |
|--|----------|--------------------------------------|---|---------------------------------------|--|
| Maintenance Concepts | Missions | Container Unloading 150 Hrs/Month | CONUS - Minimum Util 20 Hrs/Month | Combat Support Surge 300 Hrs/Month | Combat Support Baseline 50 Hrs/Month |
| | | | | | |
| Basic Baseline Firm - End of day 10 hour 50 hour phased On condition | | 3 | 4 | 2 | 1 |
| Alternate A Daily - End of day Intermediate - 25 hours PMP - 100 hours TBO's | | 19 | 14 | 7 | 5 |
| Alternate B Turnaround - After each flight Daily - Prior to first flight Calendar - 34 weeks | | 17 | 15 | 8 | 11 |
| Alternate C Preflight - Before every flight Postflight - After each flight Phased PMP - Every 100 hours On condition | | 20 | 13 | 9 | 6 |
| Alternate D Preflight - Before each flight Postflight - After each flight Daily - Before first flight Calendar - 17 weeks | | 18 | 16 | 10 | 12 |

information extracted from these data are presented in Figures 18 through 20.

ANALYSIS AND RANKING OF COMPARATIVE RESULTS

In order to rank the various maintenance concepts, it was necessary to derive a measure of effectiveness which could be used for comparing the results of the simulations. The three chosen parameters are availability, mission completion ratio, and total maintenance man-hours per flight hour. The weighting factors employed on these parameters are displayed in the following equation.

$$\text{INDEX OF MERIT} = (.75) (\text{MISSION COMPLETION RATIO}) \\ + (.15) (\text{AVAILABILITY}) + \frac{(.10)}{(\text{MMH/FH})}$$

To be consistent with the terminology used in Appendix III, the term Index of Merit is used in place of Measure of Effectiveness.

This Index of Merit has been plotted for each mission for the CH-47C and HLH in Figures 21 and 22, respectively. A review of these figures show that the previously existing (or basic) maintenance concepts are the best for most missions.

The ranking for the CH-47C and HLH maintenance concepts, resulting from an analysis of these figures, is shown in Table XXVII. This ranking has been derived by assuming that all the alternate missions are of equal weight.

CONCLUSIONS OF COMPARATIVE ANALYSIS

Table XXVII shows that the HLH basic maintenance concept performs best for the cross section of missions for both the CH-47C and HLH with respect to the identified index of merit. Modifying the index of merit could change this conclusion; however, it appears that the R&M simulation model is sufficiently sensitive to reflect the benefits of alternate maintenance concepts.

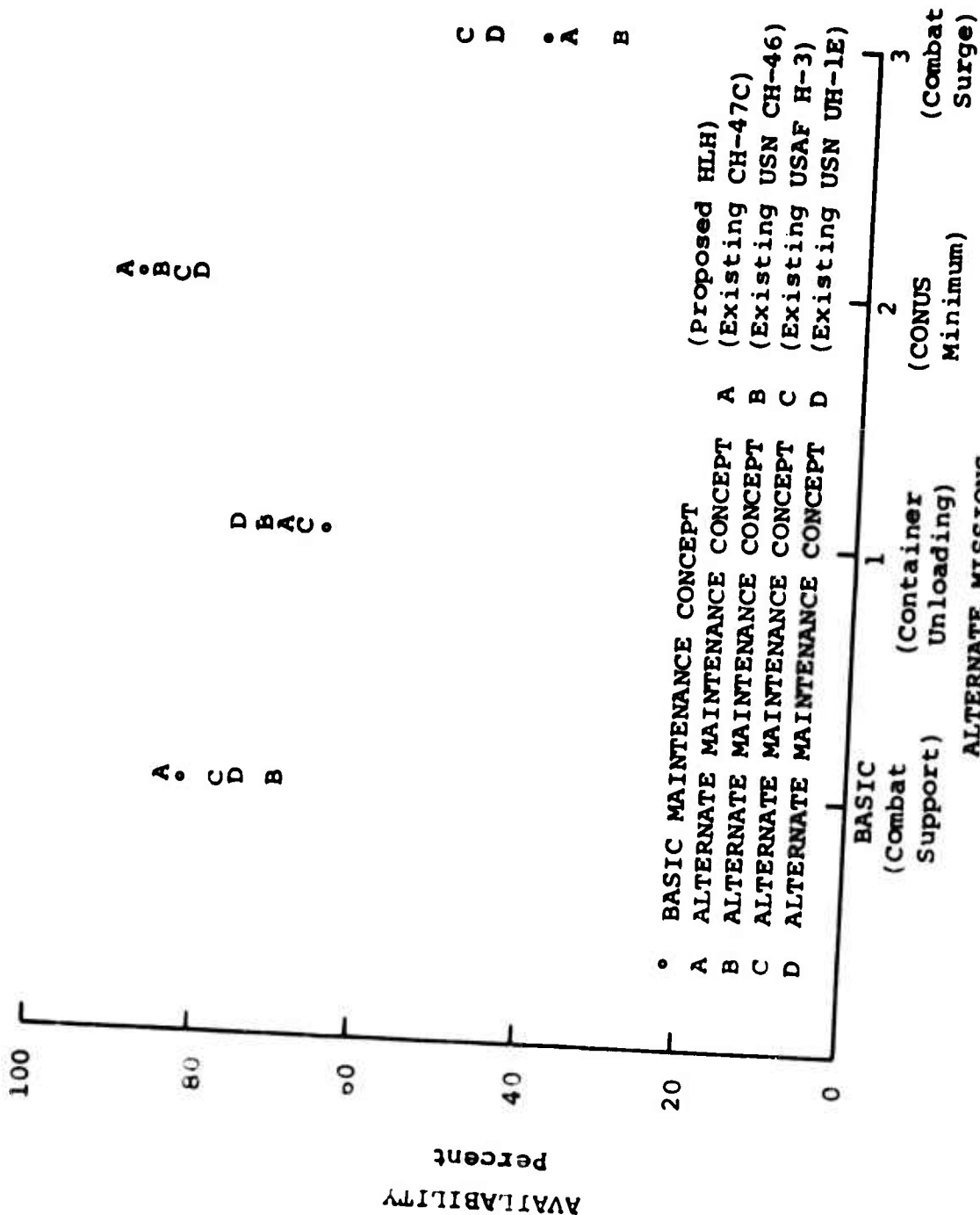


Figure 18. HLH Comparative Analysis - Availability Variations.

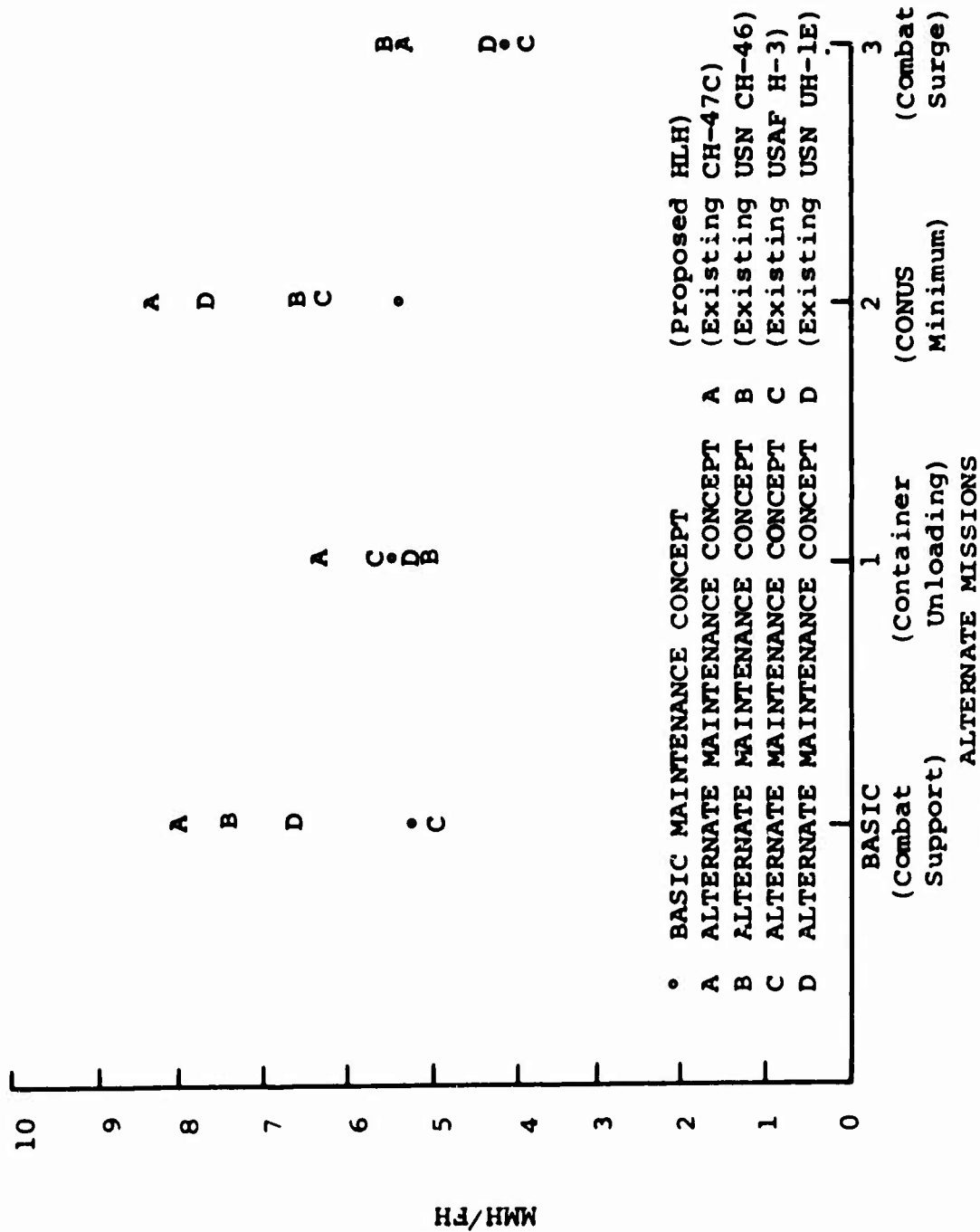


Figure 19. HLH Comparative Analysis - Maintenance Man-Hour per Flight-Hour Variations.

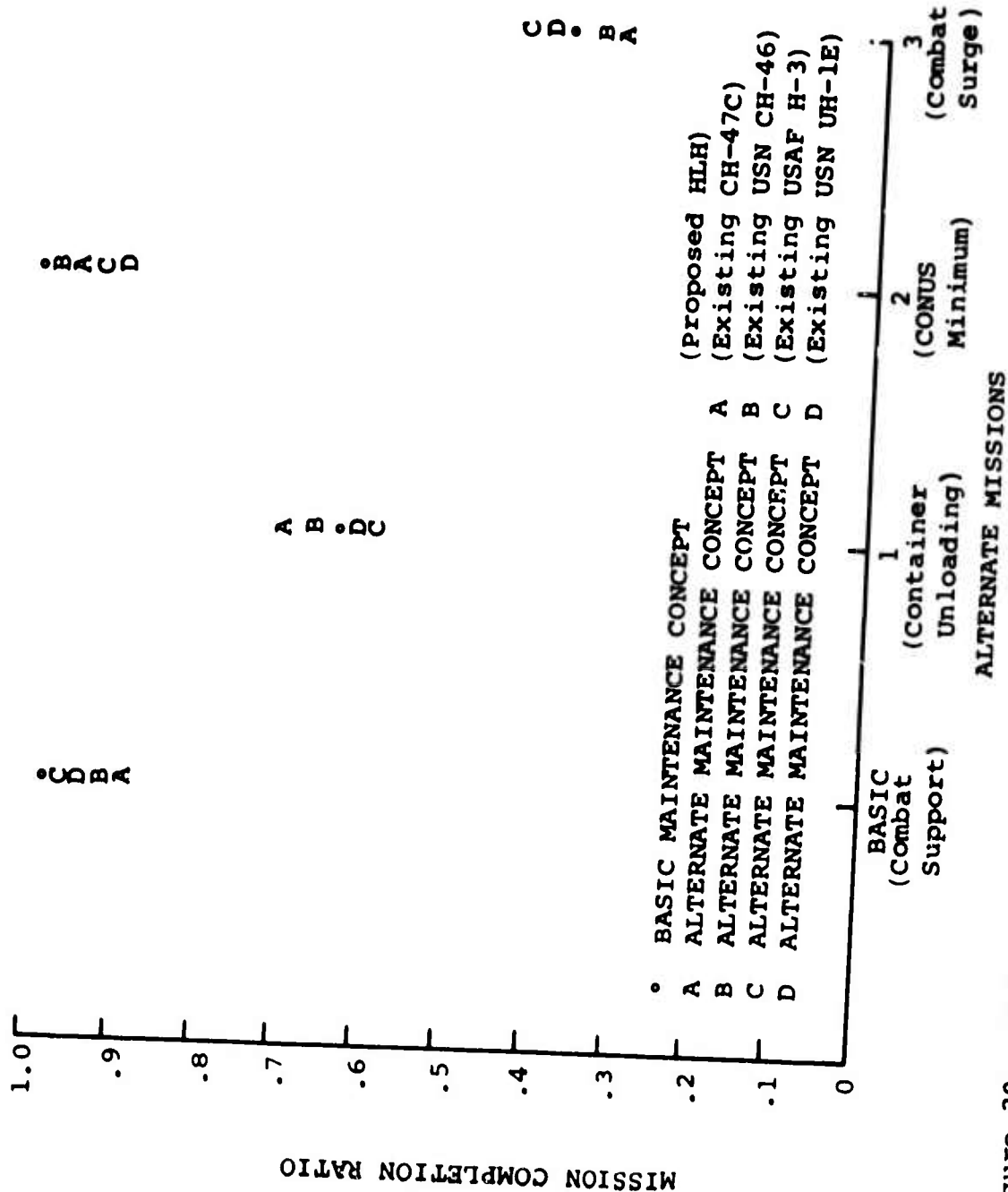


Figure 20. HLH Comparative Analysis - Mission Completion Ratio Variations.

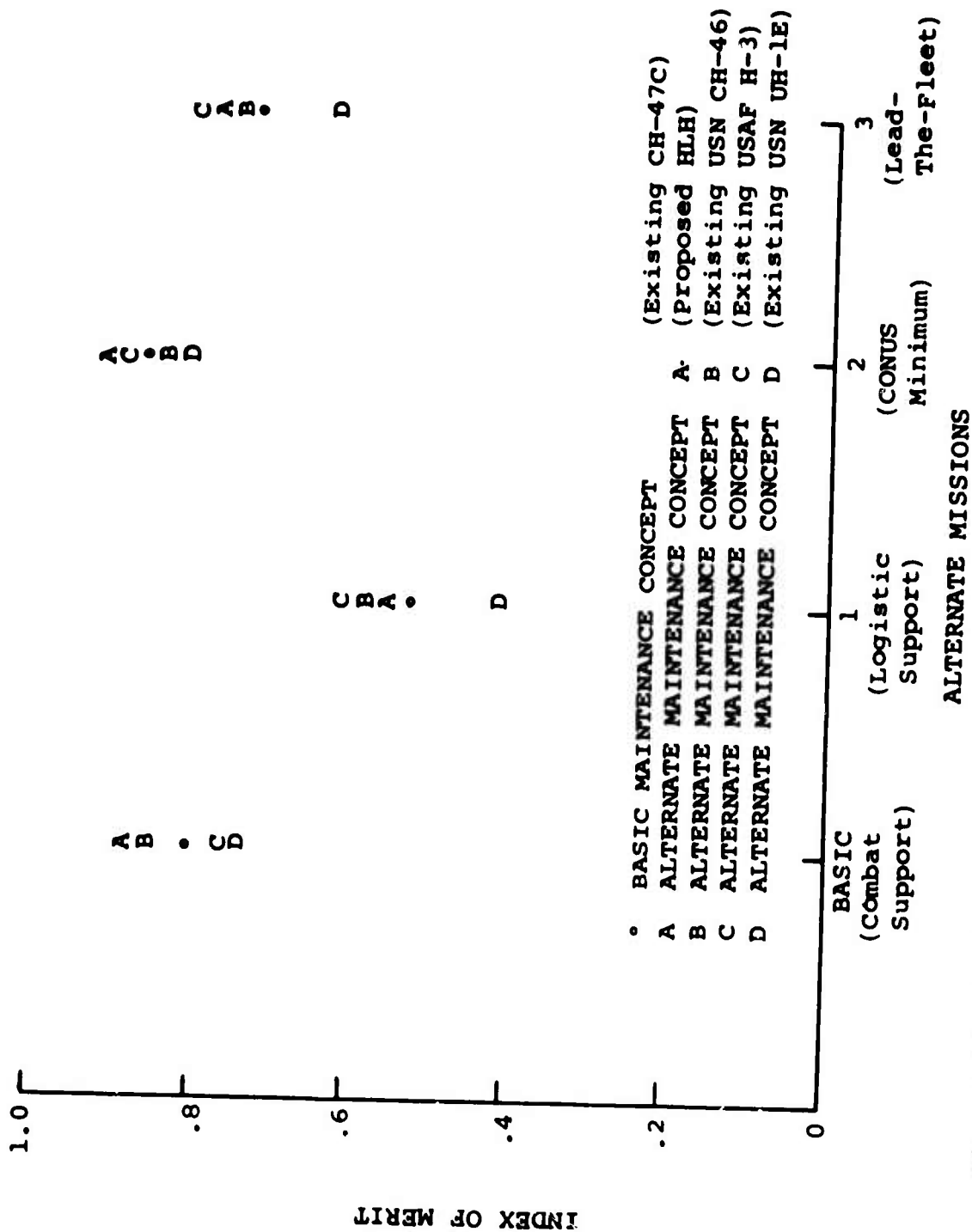


Figure 21. CH-47C Comparative Analysis - Index of Merit Variations.

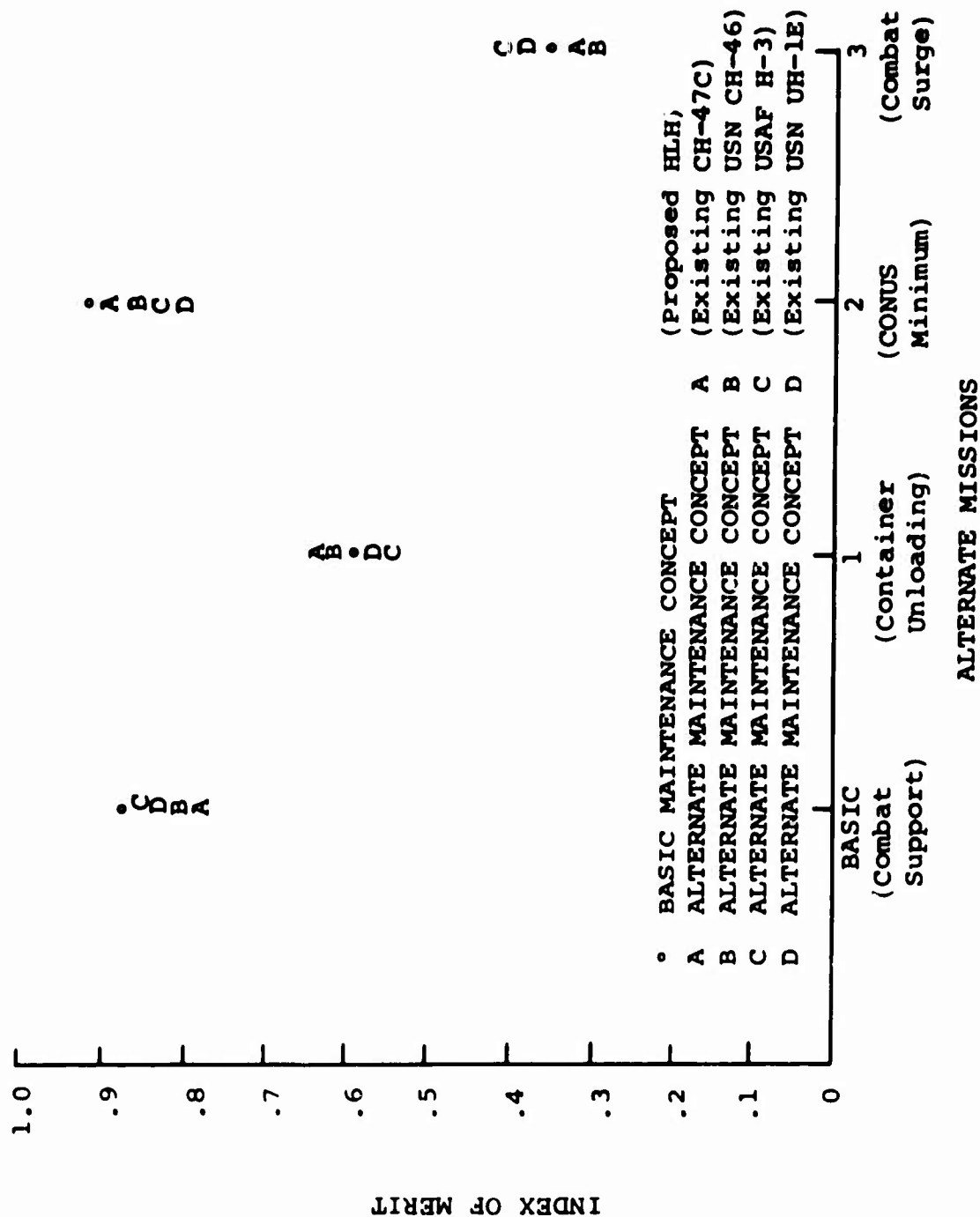


Figure 22. HLH Comparative Analysis - Index of Merit Variations.

| TABLE XXVII. RELATIVE RANKING OF MAINTENANCE CONCEPTS | | | | |
|---|---------------------------------|------|---------------------------------|--|
| CH-47C | | HLH | | |
| Rank | Maintenance Concepts | Rank | Maintenance Concepts | |
| 1 | Alternate Maintenance Concept A | 1 | Basic Maintenance Concept | |
| 2 | Alternate Maintenance Concept C | 2 | Alternate Maintenance Concept C | |
| 3 | Alternate Maintenance Concept B | 3 | Alternate Maintenance Concept A | |
| 4 | Basic Maintenance Concept | 4 | Alternate Maintenance Concept D | |
| 5 | Alternate Maintenance Concept D | 5 | Alternate Maintenance Concept B | |

CONCLUSIONS

As a result of this study, valid R&M simulation models for the CH-47C and HLH are now available for the first time. In their present form, the models are more than adequate for further analyses similar to those performed in this study. That is, the model is extremely useful in evaluating the impact upon system effectiveness of major R&M differences.

Model validity has been established through various analytical techniques, including the evaluation of model sensitivity to parametric input changes. Model flexibility has been demonstrated through the various comparative analyses. Finally, model plausibility has been confirmed through the extended application of the model, observation of model response to logical changes, and detailed analysis of model operation with respect to logical validity. This last point is an almost intuitive judgement of the model's capability, based upon all aspects of model representation of realistic operations and maintenance environment.

In summary then, the developed models are valid representations of the actual O&M environments for the aircraft they simulate. These models are flexible to provide the Army with a tool for rapid response to fairly complex R&M questions. It should be noted, however, that the model's value is functionally dependent upon its level of detail. As such, it is a complex tool, requiring substantial skill in application and analysis of results. As such, it is critical that the application be made by people competent in the analytical areas of operations research and familiar with the logical structure of the programs. These powerful and complex models, although extremely valuable if well applied, could be equally misleading and, consequently, detrimental if misused.

RECOMMENDATIONS

It is recommended that the Army continue to develop the R&M model to maximize its flexibility and utility. It must always be remembered that the simulation model derives its value from its application, not merely its existence. Therefore, in most cases, further refinement to improve user orientation is cost effective. This position is reinforced by a statement taken from Ackoff in Scientific Method*.

"In general, the amount of analysis required to construct a model is inversely related to the ease of manipulating it once it has been constructed."

Some of the specific areas that are considered viable candidates for modification are:

- Develop input-controlled output editor to provide the user with flexibility in selecting output parameters relevant to his analysis.
- Eliminate constants from logic. Wherever possible, where constants remain in the logic, they should be fully justifiable and justified.
- Develop deterministic spares routine which could be a user-selected option available in lieu of the current probabilistic routine.
- Modify off-aircraft maintenance routines to allow for the identification of maintenance personnel doing off-aircraft repairs.
- Develop personnel substitution routine with user definition of policy of personnel substitution.

None of these recommendations are critical to the current R&M model. They are presented here as candidates for future refinement and enhancement or generalization of the model to further increase its utility.

*Ackoff, Russell L., SCIENTIFIC METHOD OPTIMIZING APPLIED RESEARCH DECISIONS, New York, John Wiley & Sons Inc., 1962, p. 110.

APPENDIX I RESULTS OF SENSITIVITY ANALYSES

To demonstrate model sensitivity to changes in various maintenance parameters, several sensitivity analyses were identified and simulated. These analyses were structured to demonstrate model response to parametric changes. The discrete situations simulated were significant variations in parametric input, rather than meaningful representations of the simulated aircraft. As such, the value of the analyses is found in the identified trends and model responses, rather than in the quantitative outputs generated.

CH-47C

The CH-47C sensitivity analyses considered model response to parametric changes in the areas of TOE size and NORS probabilities. The data derived from these simulations is displayed in Table XXVIII. These results are discussed in the Model Validation section.

HLH

The HLH sensitivity analyses considered model response to parametric changes in four areas:

- Number of aircraft per platoon
- TOE size and distribution of personnel
- PMI/PMP intervals
- Maximum number of up-squawks per aircraft

The data derived from the simulations performed in these analyses are presented in Tables XXIX through XXXII. A discussion of these results and the identification of trends displayed by these analyses are contained in the Model Validation section.

TABLE XXVIII. CH-47C SENSITIVITY ANALYSES

| Output Parameters | Essentially Infinite TOE | | | | | | | Mission No. Maint. Conc. | |
|---------------------------------------|--------------------------|--------|-------|--------|-------|--------|-------|-----------------------------|--|
| | 2 | | 3 | | 2 | | 3 | | |
| | Basic | | Basic | | B | | A | | |
| | Basic | Basic | Basic | B | A | C | B | | |
| Total number of missions flown | 702 | 235 | 255 | 243 | 240 | 239 | 266 | | |
| Total number of missions called | 756 | 252 | 260 | 252 | 280 | 252 | 280 | | |
| Total utilization | 1053 | 352.5 | 382.5 | 364.5 | 360 | 358.5 | 399 | | |
| Total number of preflight inspections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total number of daily inspections | 289 | 68 | 25 | 87 | 29 | 262 | 34 | | |
| Total number of PMI inspections | 35 | 17 | 14 | 218* | 32 | 196* | 209* | | |
| Total number of PMP inspections | 13 | 5 | 3 | 2 | 8 | 1 | 0 | | |
| Total preflight MMH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total daily MMH | 1387 | 326.4 | 120 | 417.6 | 11.6 | 0 | 163.2 | | |
| Total PMI MMH | 416.5 | 202.3 | 166.6 | 65.4* | 280 | 117.6* | 62.7* | | |
| Total PMP MMH | 585.0 | 225.0 | 135.0 | 234.0 | 140 | 10.5 | 0 | | |
| Total unscheduled maintenance actions | 1966 | 617 | 364 | 496 | 514 | 260 | 213 | | |
| Total scheduled maintenance actions | 216 | 72 | 54 | 34 | 54 | 18 | 0 | | |
| Total unscheduled MMH | 2138.8 | 698.31 | 435 | 600.3 | 624.9 | 282.7 | 238.7 | | |
| Total scheduled MMH | 2946.8 | 1302.3 | 849 | 1047.4 | 856.7 | 539.6 | 225.9 | | |
| Total unscheduled EMT | 981.0 | 525.3 | 165.8 | 515.7 | 248.2 | 288.3 | 157.2 | | |
| Total scheduled EMT | 320.5 | 135.3 | 117.5 | 99.4 | 264 | 70.3 | 234.0 | | |
| Total MMH/PH | 5.18 | 5.38 | 3.20 | 4.31 | 3.78 | 2.15 | 1.13 | | |
| Total NORIS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Total ground abort | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| GSE delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| NORIS delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| NORM delay | 1301.5 | 660.6 | 283.3 | 615.1 | 512.2 | 358.6 | 391.2 | | |
| Total air aborts | 31 | 16 | 9 | 8 | 11 | 13 | 7 | | |
| No. maintenance actions at preflight | 0 | 0 | 0 | 0 | 0 | 125 | 0 | | |
| No. maintenance actions at aircrew | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| No. maintenance actions inflight | 78 | 11 | 14 | 17 | 17 | 22 | 13 | | |
| No. maintenance actions during PMI | 242 | 194 | 160 | 100* | 372 | 65* | 78* | | |
| No. maintenance actions at daily | 655 | 260 | 86 | 305 | 34 | 35 | 115 | | |
| No. maintenance actions at PMP | 991 | 135 | 95 | 65 | 80 | 35 | 0 | | |
| Personnel nonzero entries | 1900 | 500 | 135 | 450 | 160 | 80 | 86 | | |
| WTR distribution | 1.5 | 1.4 | 1.5 | 1.3 | 1.3 | 1.2 | .8 | | |
| Off aircraft WTR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Availability | 87.89 | 91.06 | 85.94 | 91.67 | 74.6 | 95.14 | 80.59 | | |
| MAIF/PH | 1.8 | 1.75 | .95 | 1.36 | 1.43 | .72 | .53 | | |

* - Postflights

* Postflights

TABLE XXVIII. Continued

| Output Parameters | Probability of NORS equals (1 - true probability of NORS) TOE is essentially infinite for all runs | | | | | | | | | | | |
|---------------------------------------|---|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|
| | Basic | | | 2 | | | 3 | | | Basic | | |
| | A | B | C | A | B | C | A | B | C | A | B | C |
| Total number of missions flown | 664 | 537 | 704 | 649 | 300 | 175 | 695 | 267 | 721 | 695 | 267 | 721 |
| Total number of missions called | 756 | 756 | 756 | 756 | 784 | 784 | 756 | 784 | 756 | 756 | 784 | 756 |
| Total utilization | 996 | 805.5 | 1056.0 | 973.5 | 450.0 | 262.5 | 1042.5 | 400.5 | 1078.5 | 1042.5 | 400.5 | 1078.5 |
| Total number of preflight inspections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total number of daily inspections | 305 | 65 | 114 | 0 | 28 | 15 | 68 | 17 | 0 | 68 | 17 | 0 |
| Total number of PMI inspections | 579* | 76 | 565* | 506* | 234* | 25 | 35 | 15 | 567* | 35 | 15 | 567* |
| Total number of PMP inspections | 1 | 18 | 0 | 11 | 0 | 7 | 12 | 4 | 14 | 7 | 12 | 4 |
| Total preflight MWH | 0 | 0 | 0 | 712 | 0 | 0 | 0 | 0 | 809 | 0 | 0 | 809 |
| Total daily MWH | 1464 | 26 | 547.2 | 0 | 134.4 | 6.00 | 326.4 | 81.6 | 0 | 326.4 | 81.6 | 0 |
| Total PMP MWH | 173* | 665 | 169.5* | 303.6* | 70.2* | 218.75 | 416.5 | 178.5 | 340.2* | 416.5 | 178.5 | 340.2* |
| Total PMI MWH | 117.0 | 315 | 0 | 115.5 | 0 | 122.5 | 540.0 | 180.0 | 147.0 | 540.0 | 180.0 | 147.0 |
| Total unscheduled maintenance actions | 1374 | 1204 | 667 | 939 | 204 | 429 | 1042 | 397 | 1029 | 1042 | 397 | 1029 |
| Total scheduled maintenance actions | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total unscheduled MWH | 1554.1 | 1464.4 | 840.52 | 1155.8 | 220.8 | 578.52 | 1214 | 493.81 | 1159.9 | 1214 | 493.81 | 1159.9 |
| Total scheduled MWH | 1754.7 | 1006.0 | 716.70 | 1131.1 | 204.6 | 347.25 | 1282.9 | 480.10 | 1296.2 | 1282.9 | 480.10 | 1296.2 |
| Total unscheduled EMT | 908.5 | 450.4 | 410.4 | 538.8 | 123.3 | 171.9 | 414.6 | 112.4 | 488.6 | 414.6 | 112.4 | 488.6 |
| Total scheduled EMT | 186.7 | 560.0 | 169.5 | 198.3 | 210.3 | 168.5 | 297.0 | 111.4 | 251.1 | 297.0 | 111.4 | 251.1 |
| Total MWH/FH | 3.17 | 2.74 | 1.42 | 2.21 | .92 | 3.2 | 2.3 | 2.24 | 2.15 | 2.3 | 2.24 | 2.15 |
| Total NORS | 2091.0 | 1240.1 | 1074.8 | 1822.6 | 432.0 | 816 | 1436 | 622 | 1329.5 | 1436 | 622 | 1329.5 |
| Total ground abort | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| GSE delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| NORM delay | 2091 | 1240.1 | 1074.8 | 1822 | 432 | 816 | 1436.1 | 622 | 1329 | 1436.1 | 622 | 1329 |
| Total air aborts | 1095.2 | 1010.4 | 579.9 | 737.1 | 11 | 340.4 | 711.6 | 223.8 | 739.7 | 711.6 | 223.8 | 739.7 |
| No. maintenance actions at preflight | 30 | 33 | 30 | 41 | 11 | 8 | 23 | 10 | 37 | 23 | 10 | 37 |
| No. maintenance actions at aircrew | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| No. maintenance actions inflight | 26 | 40 | 58 | 46 | 24 | 18 | 41 | 14 | 50 | 41 | 14 | 50 |
| No. maintenance actions during PMI | 185* | 850* | 186* | 146* | 77* | 284 | 399 | 152 | 190* | 399 | 152 | 190* |
| No. maintenance actions at daily | 1099 | 70 | 393 | 0 | 92 | 19 | 215 | 74 | 0 | 215 | 74 | 0 |
| No. maintenance actions at PMP | 35 | 210 | 0 | 340 | 0 | 100 | 355 | 145 | 390 | 355 | 145 | 390 |
| Personnel nonzero entries | 994 | 249 | 220 | 121 | 63 | 94 | 311 | 87 | 78 | 311 | 87 | 78 |
| MTR distribution | .81 | .86 | .82 | .87 | .79 | .88 | .84 | .87 | .83 | .84 | .87 | .83 |
| Off aircraft MTR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Availability | 70.36 | 69.55 | 77.61 | 65.37 | 62.02 | 42.63 | 70.94 | 58.1 | 80.75 | 70.94 | 58.1 | 80.75 |
| HALF/FH | 1.37 | 1.50 | .64 | .95 | .43 | 1.64 | 1.0 | 1.0 | .95 | 1.0 | 1.0 | .95 |
| *. Postflights | | | | | | | | | | | | |

TABLE XXIX. HLF VALIDATION - NUMBER OF AIRCRAFT SENSITIVITY

| Control Parameter | Expected Value (Baseline) | Output Values | | | | Run No. Date |
|---|------------------------------|---------------|------------|------------|------------|-----------------|
| | | 465 6/27 | 253 7/3 | 256 7/3 | 257 7/3 | |
| | | | | | | |
| Total number of missions flown | 247 | 247 | 249 | 242 | 187 | |
| Total number of missions called | 252 | 252 | 252 | 252 | 252 | |
| Total utilization | 494 | 494 | 498 | 484 | 374 | |
| Total number of preflight inspections | = 0 | 0 | 0 | 0 | 0 | |
| Total number of daily inspections | <252 | 163 | 219 | 87 | 21 | |
| Total number of PMI inspections | 38 | 42 | 43 | 43 | 33 | |
| Total number of PMP inspections | 7 | 11 | 10 | 9 | 7 | |
| Total preflight MMH | = 0 | | | | | |
| Total daily MMH | <151.2 | 77.8 | 131.4 | 52.2 | 12.6 | |
| Total PMI MMH | 380.0 | 420 | 430.0 | 430 | 330 | |
| Total PMP MMH | 140.0 | 220 | 200 | 180 | 140 | |
| Total unscheduled maintenance actions | 1.05 X utilization | 515 | 512 | 454 | 334 | |
| Total scheduled maintenance actions | = 0 | 0 | 0 | 0 | 0 | |
| Total unscheduled MMH | - | 1575.5 | 1991.40 | 1490.4 | 1749.8 | |
| Total scheduled MMH | - | 737.8 | 761.40 | 662.2 | 482.6 | |
| Total unscheduled EMT | - | 353.2 | 458.9 | 325.3 | 333.6 | |
| Total scheduled EMT | - | 475.5 | 475.5 | 426.6 | 329.7 | |
| Total MMH/FH | - | 4.45 | 5.28 | 4.23 | 5.60 | |
| Total NORs | = 0 | 0 | 0 | 0 | 0 | |
| Total ground abort | = 0 | 0 | 0 | 0 | 0 | |
| GSE delay | = 0 | 0 | 0 | 0 | 0 | |
| NORS delay | = 0 | 0 | 0 | 0 | 0 | |
| NORM delay | = 0 | 0 | 0 | 0 | 0 | |
| Total air aborts | 5.04 | 828.7 | 934.4 | 751.9 | 663.3 | |
| Number maintenance actions at preflight | = 0 | 0 | 0 | 0 | 0 | |
| Number maintenance actions at aircrew | = (0) | 0 | 0 | 0 | 0 | |
| Number maintenance actions inflight | (.10) (no. mission flown) | 27 | 32 | 22 | 15 | |
| Number maintenance actions during PMI | (.35) (no. PMI's) | 235 | 214 | 235 | 178 | |
| Number maintenance actions at daily | (.18) (no. dailies) | 56 | 74 | 33 | 7 | |
| Number maintenance actions at PMP | - | 195 | 193 | 157 | 125 | |
| Availability | - | 86.3 | 87.35 | 81.35 | 67.09 | |
| Personnel nonzero entries | 0 | 806 | 933 | 320 | 327 | |
| MTR distribution | - | .93 | 1.1 | 1.22 | 1.36 | |
| Off aircraft MTR | = 0 | 0 | 0 | 0 | 0 | |
| MAIF/FH | 1.05 | 1.04 | 1.03 | .94 | .89 | |
| Number of aircraft | | 9 | 11 | 6 | 3 | |

TABLE XXX. HLM VALIDATION - NUMBER OF SQUAWS SENSITIVITY

| Control Parameter | Expected Value (Baseline) | Output Values | | | | Run No. |
|---|------------------------------|---------------|--------|--------|--------|---------|
| | | 465 | 558 | 560 | 563 | |
| | | 6/27 | 7/6 | 7/6 | 7/6 | |
| Total number of missions flown | 247 | 247 | 247 | 246 | 247 | 247 |
| Total number of missions called | 252 | 252 | 252 | 252 | 252 | 252 |
| Total utilization | 494 | 494 | 494 | 492 | 494 | 494 |
| Total number of preflight inspections | 0 | 0 | 0 | 0 | 0 | 0 |
| Total number of daily inspections | 252 | 163 | 157 | 149 | 156 | 156 |
| Total number of PMF inspections | 38 | 42 | 41 | 43 | 41 | 41 |
| Total number of PMP inspections | 7 | 11 | 12 | 10 | 12 | 12 |
| Total preflight MWH | 0 | 0 | 0 | 0 | 0 | 0 |
| Total daily MWH | 151.2 | 77.8 | 94.2 | 89.4 | 94.8 | 94.8 |
| Total PMF MWH | 380.0 | 420 | 410 | 430 | 410 | 410 |
| Total PMP MWH | 140.0 | 220 | 240 | 200 | 240 | 240 |
| Total unscheduled maintenance actions | 1.05 X utilization | 515 | 532 | 456 | 534 | 534 |
| Total scheduled MWH | 0 | 0 | 0 | 0 | 0 | 0 |
| Total unscheduled MWH | 1575.5 | 2021 | 1612.2 | 2050.9 | 2050.9 | 2050.9 |
| Total scheduled EMT | 737.8 | 744.2 | 719.4 | 744.8 | 744.8 | 744.8 |
| Total unscheduled EMT | 353.2 | 474.1 | 484.1 | 501.6 | 501.6 | 501.6 |
| Total MWH/FH | 475.5 | 566.9 | 432.2 | 578.2 | 578.2 | 578.2 |
| Total NORs | 4.45 | 5.32 | 4.55 | 5.40 | 5.40 | 5.40 |
| Total ground abort | 0 | 0 | 0 | 0 | 0 | 0 |
| GSE delay | 0 | 0 | 0 | 0 | 0 | 0 |
| NORs delay | 0 | 0 | 0 | 0 | 0 | 0 |
| NORM delay | 0 | 0 | 0 | 0 | 0 | 0 |
| Total air aborts | 828.7 | 1041.0 | 916.3 | 1079.8 | 1079.8 | 1079.8 |
| Number maintenance actions at preflight | 5.04 | 5 | 6 | 5 | 5 | 5 |
| Number maintenance actions at aircrew | 0 | 0 | 0 | 0 | 0 | 0 |
| Number maintenance actions inflight | (6) | 0 | 1 | 1 | 1 | 1 |
| Number maintenance actions during PMF | (.10) (no. mission flown) | 27 | 25 | 20 | 25 | 25 |
| Number maintenance actions at daily | (5) (no. PMF's) | 235 | 221 | 254 | 221 | 221 |
| Number maintenance actions at PMP | (.35) (no. PMF's) | 56 | 54 | 43 | 54 | 54 |
| Availability | (18) (no. PMP's) | 195 | 227 | 133 | 231 | 231 |
| Personnel nonzero entries | 86.3 | 82.82 | 84.88 | 82.17 | 82.17 | 82.17 |
| MTTR distribution | 806 | 915 | 714 | 895 | 895 | 895 |
| Off aircraft MTTR | .97 | 1.14 | 1.01 | 1.10 | 1.10 | 1.10 |
| WALF/PH | 0 | 0 | 0 | 0 | 0 | 0 |
| Maximum number of up squawks | 1.05 | 1.04 | 1.08 | .93 | 1.08 | 1.08 |
| | 100 | 10 | 1 | 5 | | |

TABLE XXI. HLH VALIDATION - PMP SENSITIVITY

| Control Parameter | Expected Value (Baseline) | Output Values | | | | | | | | | | Run No. |
|---|---------------------------|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| | | 4/5 | 155 | 156 | 158 | 334 | 335 | 336 | 337 | 338 | 339 | |
| | | 6/27 | 7/3 | 7/3 | 7/3 | 7/5 | 7/6 | 7/6 | 7/6 | 7/6 | 7/6 | |
| Total number of missions flown | 247 | 247 | 245 | 244 | 246 | 248 | 246 | 246 | 246 | 246 | 245 | |
| Total number of missions called | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | |
| Total utilization | 494 | 494 | 490 | 488 | 492 | 496 | 492 | 492 | 492 | 492 | 490 | |
| Total number of preflight inspections | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total number of daily inspections | 252 | 163 | 193 | 186 | 176 | 178 | 187 | 187 | 187 | 185 | 185 | |
| Total number of PMI inspections | 38 | 42 | 5 | 49 | 14 | 18 | 4 | 4 | 4 | 50 | 50 | |
| Total number of PMP inspections | 7 | 11 | 0 | 0 | 6 | 6 | 2 | 2 | 2 | 0 | 0 | |
| Total preflight WWH | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total daily WWH | 151.2 | 77.8 | 115.8 | 111.6 | 105.6 | 106.80 | 112.20 | 112.20 | 112.20 | 111 | 111 | |
| Total PMI WWH | 380.0 | 420 | 50 | 490 | 140.0 | 180.0 | 40.0 | 40.0 | 40.0 | 500 | 500 | |
| Total PMP WWH | 140.0 | 220 | 0 | 0 | 120.0 | 120.0 | 40.0 | 40.0 | 40.0 | 0 | 0 | |
| Total unscheduled maintenance actions | 1.05 X utilization | 515 | 116 | 363 | 291 | 289 | 158 | 158 | 158 | 356 | 356 | |
| Total scheduled maintenance actions | 0 | 1575.5 | 438.9 | 1271.3 | 1231.5 | 1339.2 | 701.3 | 701.3 | 701.3 | 1307.8 | 1307.8 | |
| Total unscheduled WWH | - | 737.8 | 265.80 | 601.6 | 365.6 | 406.8 | 192.2 | 192.2 | 192.2 | 611.0 | 611.0 | |
| Total scheduled WWH | - | 353.2 | 109.6 | 314.7 | 286.3 | 250.8 | 208.3 | 208.3 | 208.3 | 350.9 | 350.9 | |
| Total unscheduled EMT | - | 474.5 | 28.0 | 336.6 | 194.8 | 212.3 | 48.0 | 48.0 | 48.0 | 344.1 | 344.1 | |
| Total WWH/PH | - | 4.45 | 1.21 | 3.77 | 3.13 | 3.41 | 1.77 | 1.77 | 1.77 | 3.86 | 3.86 | |
| Total WORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total ground abort | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GSE delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| WORS delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NORM delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total air aborts | 5.24 | 828.7 | 137.6 | 651.3 | 481.1 | 463.1 | 256.3 | 256.3 | 256.3 | 695.0 | 695.0 | |
| Number maintenance actions at preflight | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Number maintenance actions at aircrew | (0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Number maintenance actions inflight | (10) | 27 | 19 | 27 | 22 | 23 | 27 | 27 | 27 | 17 | 17 | |
| Number maintenance actions during PMI | (51) (no. PMI's) | 235 | 29 | 270 | 76 | 95 | 21 | 21 | 21 | 272 | 272 | |
| Number maintenance actions at daily | (135) (no. dailies) | 56 | 61 | 58 | 69 | 53 | 72 | 72 | 72 | 60 | 60 | |
| Number maintenance actions at PMP | (18) (no. PMP's) | 195 | 0 | 0 | 119 | 114 | 34 | 34 | 34 | 0 | 0 | |
| Availability | - | 86.3 | 97.72 | 89.26 | 92.04 | 92.34 | 95.76 | 95.76 | 95.76 | 88.5 | 88.5 | |
| Personnel nonzero entries | - | 806 | 18 | 496 | 507 | 485 | 268 | 268 | 268 | 450 | 450 | |
| WTR distribution | - | -93 | 1.7 | 1.05 | 1.24 | 1.30 | 1.66 | 1.66 | 1.66 | 1.10 | 1.10 | |
| Off aircraft WTR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| WTR/PH | 1.05 | 1.04 | .24 | .74 | .59 | .58 | .32 | .32 | .32 | .73 | .73 | |
| PMP interval (hrs) | 50.0 | 800.0 | 300.0 | 300.0 | 100.0 | 100.0 | 800.0 | 800.0 | 800.0 | 300.0 | 300.0 | |
| PMI interval (hrs) | 10.0 | 100.0 | 10.0 | 10.0 | 25.0 | 25.0 | 100.0 | 100.0 | 100.0 | 10.0 | 10.0 | |

TABLE XXXII. HLM VALIDATION - PERSONNEL SENSITIVITY

| Control Parameter | Expected Value (Baseline) | Output Values | | | | | | | | | | Run No. Date |
|---|----------------------------|---------------|-------------|-------------|--------|--------|--------|------------|------------|------------|------------|--------------|
| | | 465 6/27 | 906 6/28 | 907 6/28 | 6/28 | 6/28 | 6/28 | 72 5/28 | 70 6/28 | 70 6/28 | 70 6/28 | |
| Total number of missions flown | 247 | 247 | 246 | 245 | 245 | 245 | 245 | 246 | 245 | 245 | 245 | |
| Total number of missions called | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | 252 | |
| Total utilization | 494 | 494 | 492 | 490 | 490 | 490 | 490 | 492 | 490 | 490 | 490 | |
| Total number of preflight inspections | < 252 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total number of daily inspections | 38 | 163 | 180 | 171 | 138 | 163 | 166 | 163 | 166 | 166 | 166 | |
| Total number of PMI inspections | 7 | 11 | 10 | 10 | 10 | 10 | 11 | 10 | 11 | 11 | 11 | |
| Total preflight MMH | <151.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total daily MMH | 380.0 | 97.8 | 108.0 | 102.6 | 82.8 | 97.8 | 99.6 | 97.8 | 99.6 | 99.6 | 99.6 | |
| Total PMI MMH | 140.0 | 420 | 420 | 420 | 430 | 420 | 420 | 420 | 420 | 420 | 420 | |
| Total scheduled maintenance actions | 1.05 X utilization | 515 | 518 | 501 | 220.0 | 200 | 220 | 200 | 220 | 220 | 220 | |
| Total unscheduled maintenance actions | 0 | 0 | 0 | 0 | 458 | 501 | 478 | 501 | 478 | 478 | 478 | |
| Total scheduled MMH | - | 1575.5 | 2269.9 | 2391.2 | 1379.4 | 1700.4 | 1667.8 | 1700.4 | 1667.8 | 1667.8 | 1667.8 | |
| Total unscheduled MMH | - | 737.8 | 728 | 722.6 | 732.8 | 717.8 | 729.6 | 732.8 | 717.8 | 729.6 | 729.6 | |
| Total scheduled EMT | - | 353.2 | 440.2 | 516.8 | 683.6 | 452.0 | 401.3 | 452.0 | 401.3 | 401.3 | 401.3 | |
| Total unscheduled EMT | - | 475.5 | 402.0 | 420.3 | 690.5 | 512.9 | 459.1 | 512.9 | 459.1 | 459.1 | 459.1 | |
| Total MMH/FH | - | 4.45 | 5.80 | 6.02 | 4.08 | 4.66 | 4.63 | 4.66 | 4.63 | 4.63 | 4.63 | |
| Total NORS | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total ground abort | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GSE delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NORS delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NORM delay | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Total air aborts | 5.04 | 828.7 | 842.2 | 937.1 | 1374.1 | 984.9 | 860.4 | 984.9 | 860.4 | 860.4 | 860.4 | |
| Number maintenance actions at preflight | 0 | 5 | 6 | 7 | 7 | 7 | 7 | 6 | 7 | 7 | 7 | |
| Number maintenance actions at aircrew | (0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Number maintenance actions inflight | (.10) (no. missions flown) | 27 | 43 | 29 | 28 | 20 | 25 | 20 | 25 | 25 | 25 | |
| Number maintenance actions during PMI | (5) (no. PMI's) | 235 | 224 | 228 | 197 | 232 | 206 | 232 | 206 | 206 | 206 | |
| Number maintenance actions at daily | (.35) (no. dailies) | 56 | 76 | 62 | 45 | 58 | 62 | 45 | 58 | 62 | 62 | |
| Number maintenance actions at PMP | (18) (no. PMP's) | 195 | 170 | 178 | 182 | 190 | 180 | 182 | 190 | 180 | 180 | |
| Availability | - | 86.3 | 86.1 | 84.5 | 77.31 | 83.7 | 85.77 | 83.7 | 85.77 | 85.77 | 85.77 | |
| Personnel nonzero entries | - | 806 | 111 | 350 | 1088 | 630 | 965 | 630 | 965 | 965 | 965 | |
| MTR distribution | - | .93 | 1.199 | 1.26 | .95 | .99 | 1.03 | .99 | 1.03 | 1.03 | 1.03 | |
| Off aircraft MTR | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| MAIF/YH | 1.05 | 1.04 | 1.05 | 1.02 | .93 | 1.02 | .98 | 1.02 | .98 | .98 | .98 | |
| Total TOE | - | 36 | 360 | 100 | 24 | 36 | 36 | 36 | 36 | 36 | 36 | |
| Personnel types 01, 02 - first shift | - | 13.6 | 90.90 | 25.25 | 6.6 | 9.9 | 18.6 | 9.9 | 18.6 | 18.6 | 18.6 | |
| Personnel types 01, 02 - second shift | - | 11.6 | 90.90 | 25.25 | 6.6 | 9.9 | 18.6 | 9.9 | 18.6 | 18.6 | 18.6 | |

APPENDIX II
INPUT CHANGES FOR COMPARATIVE ANALYSES

CH-47C

Tables XXXIII through XXXVI identify the various alternate mission/maintenance concept combinations simulated for the CH-47C comparative analyses.

HLH

Tables XXXVII through XXXIX identify the alternate missions employed in the HLH comparative analysis.

Tables XL through XLIII contain the alternate maintenance concepts used in the analysis.

All combinations of runs made in the HLH analyses can be reproduced by combining the proper mission/maintenance concept alternatives.

TABLE XXXIII. CH-47C ALTERNATE MAINTENANCE CONCEPTS - BASIC MISSION

| | | | | | | |
|---|--------------------|---------|----------|----------|----------|----------------|
| *MISSION BASIC MAINTENANCE CONCEPT A | | | | | | |
| 1 | 00010010 | 200150 | | | | 00025100 |
| 2 | 00010010 | 041,52 | | | | 00027000 |
| 3 | 0,00001 | 0,00002 | | | | 00027100 |
| 4 | 0,00001 | 0,00001 | 0,700015 | 0,000025 | 0,000025 | 00028500 |
| *CH-47C MAINT CONCEPT A -DAILY, 10 40, 50 40 PM | | | | | | |
| INITIAL | 401(1,0),70 | | | | | 000165500 |
| INITIAL | 401(1,0),55 | | | | | 000165501 |
| INITIAL | 401(2,1),25 | | | | | 000165502 |
| INITIAL | 401(3,1),70 | | | | | 000165503 |
| INITIAL | 401(10,1),25 | | | | | 000165504 |
| INITIAL | 401(11,1),35 | | | | | 000165505 |
| INITIAL | 4100,500 | | | | | 000165506 |
| INITIAL | 4100,100 | | | | | 000165507 |
| INITIAL | 4401(2,1-10),50000 | | | | | 000165508 |
| | | | | | | 00165500 |
| *MISSION BASIC MAINTENANCE CONCEPT B | | | | | | |
| 1 | 00000002 | 0000005 | 0000000 | 75000011 | 00000016 | 25000000023400 |
| 2 | 00010010 | 041,52 | | | | 00191000 |
| 3 | 0,00002 | 0,00003 | | | | 00191100 |
| *CH-47C MAINT CONCEPT B -30 WEEK 24,24300 7400 | | | | | | |
| INITIAL | 4100,50000 | | | | | 000165500 |
| INITIAL | 4100,420 | | | | | 000165501 |
| INITIAL | 401(1,2),60 | | | | | 000165502 |
| INITIAL | 401(2,1),00 | | | | | 000165503 |
| INITIAL | 401(3,1),130 | | | | | 000165504 |
| INITIAL | 401(10,1),10 | | | | | 000165505 |
| INITIAL | 401(11,1),5 | | | | | 000165506 |
| INITIAL | 401(1,0),130 | | | | | 000165507 |
| INITIAL | 401(1,0),5 | | | | | 000165508 |
| INITIAL | 4100,7 | | | | | 000165509 |
| INITIAL | 4100,250 | | | | | 000165510 |
| | | | | | | 00165511 |
| | | | | | | 00165512 |
| *MISSION BASIC MAINTENANCE CONCEPT C | | | | | | |
| 1 | 00000002 | 0000005 | 0000000 | 75000011 | 00000016 | 25000000023400 |
| 2 | 00010010 | 041,52 | | | | 00025100 |
| 3 | 0,00001 | 0,00000 | | | | 00191000 |
| *CH-47C MAINT CONCEPT C | | | | | | |
| INITIAL | 4100,1000 | | | | | 00191100 |
| INITIAL | 4100,20 | | | | | 00191200 |
| INITIAL | 401(1,2),50000 | | | | | 00165500 |
| INITIAL | 401(2,1),50 | | | | | 00165501 |
| INITIAL | 401(3,1),55 | | | | | 00165502 |
| INITIAL | 401(10,1),20 | | | | | 00165503 |
| INITIAL | 401(11,1),5 | | | | | 00165504 |
| INITIAL | 401(1,0),55 | | | | | 00165505 |
| INITIAL | 401(1,0),5 | | | | | 00165506 |
| | | | | | | 00165507 |
| | | | | | | 00165508 |
| | | | | | | 00165509 |
| *MISSION BASIC MAINTENANCE CONCEPT D | | | | | | |
| 1 | 00000002 | 0000005 | 0000000 | 75000011 | 00000016 | 25000000023400 |
| 2 | 00010010 | 041,52 | | | | 00191000 |
| 3 | 0,00002 | 0,00003 | | | | 00191100 |
| *CH-47C MAINT CONCEPT D | | | | | | |
| INITIAL | 4100,50000 | | | | | 00191200 |
| INITIAL | 4100,20 | | | | | 00165500 |
| INITIAL | 401(1,2),100 | | | | | 00165501 |
| INITIAL | 401(2,1),240 | | | | | 00165502 |
| INITIAL | 401(3,1),100 | | | | | 00165503 |
| INITIAL | 401(10,1),00 | | | | | 00165504 |
| INITIAL | 401(11,1),20 | | | | | 00165505 |
| INITIAL | 401(1,0),100 | | | | | 00165506 |
| INITIAL | 401(1,0),5 | | | | | 00165507 |
| INITIAL | 4100,5 | | | | | 00165508 |
| INITIAL | 4100,110 | | | | | 00165509 |
| | | | | | | 00165510 |
| | | | | | | 00165511 |

010015N I 001476ZANRCE C34009 00018

81

[illegible]

TABLE XXXVI. CH-47C ALTERNATE MAINTENANCE CONCEPTS - MISSION 3

| MISSION 3 | | MAINTENANCE CONCEPT BASIC | |
|-----------|---|---------------------------|---------------|
| 0 | CH-47 MISSION 3 - 100 449/43- FT. RUCKER- LEAD THE FLEET | *****00165401 | |
| 0 | 3 A/C PER SITE-43 STANDBY | *****00165402 | |
| 0 | INITIAL 441(1-10,10),1 | MISSION 3,BASIC | *****00165403 |
| | INITIAL 441(10,5),1 | *****00165404 | |
| | INITIAL 441(10,11),15 | *****00165405 | |
| | INITIAL 441(1,12),10 | *****00165406 | |
| | INITIAL K194,1 | *****00165407 | |
| | INITIAL 441(1,15),0 | *****00165408 | |
| | INITIAL K191,3 | *****00165409 | |
| | INITIAL K192,5 | *****00165411 | |
| | INITIAL K193,480 | *****00165412 | |
| | INITIAL 441(2,12),35 | *****00165413 | |
| 0 | MISSION 3 | MAINTENANCE CONCEPT A | |
| 2 | 00010016 200102 | 00025100 | |
| 12 | FUNCTION 441,32 | 00027600 | |
| 0,30001 | 0,99992 | 00027700 | |
| 0,30005 | 0,000010 0,700013 0,000020 0,999925 | 00028500 | |
| 0 | CH-47 MISSION 3 - 100 449/43- FT. RUCKER- LEAD THE FLEET | *****00165401 | |
| 0 | 3 A/C PER SITE-43 STANDBY | *****00165402 | |
| | INITIAL 441(1-10,10),1 | MISSION 3,A | *****00165403 |
| | INITIAL 441(10,5),1 | *****00165404 | |
| | INITIAL 441(10,11),15 | *****00165405 | |
| | INITIAL 441(1,12),10 | *****00165406 | |
| | INITIAL K194,1 | *****00165407 | |
| | INITIAL 441(1,15),0 | *****00165408 | |
| | INITIAL K191,3 | *****00165409 | |
| | INITIAL K192,5 | *****00165411 | |
| | INITIAL K193,480 | *****00165412 | |
| | INITIAL 441(2,12),35 | *****00165413 | |
| 0 | CH-47 MAINT CONCEPT A -DAILY,10 4R,50 4R PRI | *****00165500 | |
| | INITIAL 441(1,8),70 | *****00165501 | |
| | INITIAL 441(1,9),35 | *****00165502 | |
| | INITIAL 441(2,1),25 | *****00165503 | |
| | INITIAL 441(3,1),70 | *****00165504 | |
| | INITIAL 441(10,1),25 | *****00165505 | |
| | INITIAL 441(11,1),35 | *****00165506 | |
| | INITIAL K190,500 | *****00165507 | |
| | INITIAL K190,100 | *****00165509 | |
| | INITIAL 446(012,1-18),30000 | MISSION 3,A | *****00165509 |
| 0 | MISSION 3 | MAINTENANCE CONCEPT B | |
| 1 | .9999992 9999995 9999998 75000011 99999916 25000000023400 | 00151000 | |
| 56 | FUNCTION 441,32 | 00151100 | |
| 0,50004 | 0,99995 | 00151200 | |
| 0 | CH-47 MISSION 3 - 100 449/43- FT. RUCKER- LEAD THE FLEET | *****00165401 | |
| 0 | 3 A/C PER SITE-43 STANDBY | *****00165402 | |
| | INITIAL 441(1-10,10),1 | MISSION 3,B | *****00165403 |
| | INITIAL 441(10,5),1 | *****00165404 | |
| | INITIAL 441(10,11),15 | *****00165405 | |
| | INITIAL 441(1,12),10 | *****00165406 | |
| | INITIAL K194,1 | *****00165407 | |
| | INITIAL 441(1,15),0 | *****00165408 | |
| | INITIAL K191,3 | *****00165409 | |
| | INITIAL K192,5 | *****00165411 | |
| | INITIAL K193,480 | *****00165412 | |
| | INITIAL 441(2,12),35 | *****00165413 | |

TABLE XXXVI. Continued

| | | | | | | |
|---------|---------------------------|--|------------------|----------|----------|----------------|
| 0 | CM-47C | MAINT CONCEPT 2: | | | | 00165500 |
| | INITIAL | X189,1000 | | | | 00165501 |
| | INITIAL | X190,20 | | | | 00165502 |
| | INITIAL | 4X1(1,2),30000 | | | | 00165503 |
| | INITIAL | 4X1(2,1),30 | | | | 00165504 |
| | INITIAL | 4X1(3,1),35 | | | | 00165505 |
| | INITIAL | 4X1(10,1),20 | | | | 00165506 |
| | INITIAL | 4X1(11,1),3 | | | | 00165507 |
| | INITIAL | 4X1(1,0),35 | | | | 00165508 |
| | INITIAL | 4X1(1,0),3 | | | | 00165509 |
| 0 | MISSION 3 | MAINTENANCE CONCEPT 0 | | | | |
| 1 | .0000000 | 0000000 | 0000000 | 75000011 | 00000016 | 25000000023400 |
| 96. | FUNCTION | 4X1,32 | | | | 00151000 |
| 0.50002 | 0.00003 | | | | | 00151100 |
| 0 | | | | | | 00151200 |
| 0 | CM-47 | MISSION 3 = 100 HRS/40 FT. RUCKER = LEAD THE FLEET | | | | *****00165501 |
| 0 | 3 A/C PER SITE=40 STANDBY | | | | | *****00165502 |
| | INITIAL | 4X1(1-10,10),1 | MISSION 3, BASIC | | | *****00165503 |
| | INITIAL | 4X1(10,5),1 | | | | *****00165504 |
| | INITIAL | 4X1(10,11),15 | | | | 00165505 |
| | INITIAL | 4X1(1,12),10 | | | | 00165506 |
| | INITIAL | X190,1 | | | | 00165507 |
| | INITIAL | 4X1(1,15),0 | | | | 00165508 |
| | INITIAL | X191,3 | | | | 00165509 |
| | INITIAL | X192,5 | | | | 00165510 |
| | INITIAL | X193,400 | | | | 00165511 |
| | INITIAL | 4X1(2,12),35 | | | | 00165512 |
| | INITIAL | X190,30000 | | | | 00165513 |
| | INITIAL | X190,20 | | | | 00165514 |
| | INITIAL | 4X1(1,2),105 | | | | 00165515 |
| | INITIAL | 4X1(2,1),240 | | | | 00165516 |
| | INITIAL | 4X1(3,1),100 | | | | 00165517 |
| | INITIAL | 4X1(10,1),90 | | | | 00165518 |
| | INITIAL | 4X1(11,1),20 | | | | 00165519 |
| | INITIAL | 4X1(1,0),100 | | | | 00165520 |
| | INITIAL | 4X1(1,0),3 | | | | 00165521 |
| | INITIAL | X190,3 | | | | 00165522 |
| | INITIAL | X190,110 | | | | 00165523 |

| TABLE XXXVII. HLH ALTERNATE MISSION 1 | | |
|---|---|---------------|
|00103510 | | |
| * MISSION 0 1 = 3 A/C = MLM = NO STANDBY REQUIRED | |00103520 |
|00103530 | | |
| INITIAL | 441(1-10,5),1/441(1-10,10),1 | 00103540 |
| INITIAL | 441(1,11),70/441(2-10,11),10/441(1,12),10 | 00103550 |
| INITIAL | 441(2,12),80/441(3,12),0/441(0,12),0 | 00103560 |
| INITIAL | 441(1,13),0/441(2,14),2 | 00103570 |
| INITIAL | X101,43 | 00103580 |
| INITIAL | X106,41 | 00103590 |

| TABLE XXXVIII. HLH ALTERNATE MISSION 2 | | |
|--|---------------------------------------|---------------|
|00103510 | | |
| * MISSION 0 2 = 9 A/C = 1 STANDBY REQUIRED | |00103520 |
|00103530 | | |
| INITIAL | 441(1-2,5),1/441(1-2,10),3 | 00103540 |
| INITIAL | 441(1,11),80/441(2,11),00/441(1,12),2 | 00103550 |
| INITIAL | 441(2,12),120/441(3,12),0/441(0,12),0 | 00103560 |
| INITIAL | X106,43 | 00103570 |

| TABLE XXXIX. HLH ALTERNATE MISSION 3 | | |
|--|--|---------------|
|00103510 | | |
| * MISSION 0 3 = 9 A/C = MLM = STANDBY REQUIRED | |00103520 |
|00103530 | | |
| INITIAL | 441(1-10,5),1/441(1-5,10),4/441(6-10,10),9 | 00103540 |
| INITIAL | 441(1,11),70/441(2-10,11),10/441(1,12),10 | 00103550 |
| INITIAL | 441(2,12),80/441(3,12),0/441(0,12),0 | 00103560 |
| INITIAL | 441(0,6),30000/441(1,21),240 | 00103570 |

TABLE XL. HLH ALTERNATE MAINTENANCE CONCEPT A

| | | | |
|----------|--|--------|----------|
| 8 | 00010016 | 200150 | 00025100 |
| 10. | FUNCTION | R41,02 | 00020400 |
| 0.300000 | 0.999955 | | 00020500 |
| 0 | | | 00020600 |
| 0 | | | 00020700 |
| 0 | | | 00020800 |
| 95. | FUNCTION | R41,02 | 00103200 |
| 0.300015 | 0.999910 | | 00103300 |
| 0 | | | 00103400 |
| 0 | | | 00103510 |
| 0 | MAINTENANCE CONCEPT- ALTERNATE: A = 100 HR PMP 25 HR PMJ -HLH----- | | 00104320 |
| 0 | | | 00104330 |
| INITIAL | 4K1(1,2),220/4K1(2,1),00/4K1(3,1),00/4K1(5,1),6720 | | 00104400 |
| INITIAL | 4K1(10,1),40/4K1(4,6),30000 | | 00104500 |
| INITIAL | 4K1(11,1),40 | | 00104600 |
| INITIAL | 4K1(1,0),00/4K1(1,9),40/4K1(1,10),3 | | 00104700 |
| INITIAL | K100,K1000 | | 00104900 |
| INITIAL | K100,K250 | | 00105000 |
| INITIAL | 4M6(16,1-5),1200/4M6(16,4-6),2400/4M6(16,7-10),1200 | | 00105600 |
| INITIAL | 4M6(16,11),800/4M6(17,1),2157/4M6(17,2),2121 | | 00105610 |
| INITIAL | 4M6(17,3),2106/4M6(17,4),2146/4M6(17,5),2147 | | 00105620 |
| INITIAL | 4M6(17,6),2134/4M6(17,7),1914/4M6(17,8),1919 | | 00105630 |
| INITIAL | 4M6(17,9-10),1932/4M6(17,11),0402 | | 00105640 |
| INITIAL | 4M6(18,1-11),0 | | 00105650 |

TABLE XLI. HLH ALTERNATE MAINTENANCE CONCEPT B

| | | |
|----------|---|----------|
| 0 | CHANGES TO INCORPORATE CALENDAR INSPECTION INTERVALS | 00002710 |
| 10 | VARIABLE (241+1000+241)0X195 INITIAL DAYS SINCE PMP | 00002800 |
| 11 | VARIABLE (247+(C1/240))0X195 DAYS SINCE PMP | 00002900 |
| 236 | VARIABLE X195-X196 PMP CALENDAR MINIMUM | 00019010 |
| 1 | 9999992 5500005 9999998 25000011 99999916 250000 | 00023400 |
| 17 | 00000121 999999 | 00023500 |
| 2 | 00010016 230113 | 00023100 |
| 18 | FUNCTION 241,32 | 00028400 |
| 0.500050 | 0.999951 | 00028500 |
| 0 | | 00028600 |
| 0 | | 00028700 |
| 0 | | 00028800 |
| 56 | FUNCTION 241,32 | 00103200 |
| 0.60002 | 0.99993 | 00103300 |
| 0 | | 00103400 |
| 0 | MAINTENANCE CONCEPT -ALTERNATE B - 36 WEEK CAL. INSP. | 00104310 |
| 0 | | 00104320 |
| INITIAL | 4X1(1,2),220/4X1(2,1),130/4X1(3,1),150/4X1(5,1),6720 | 00104400 |
| INITIAL | 4X1(10,1),20/4X1(4,6),30000 | 00104500 |
| INITIAL | 4X1(11,1),3 | 00104600 |
| INITIAL | 4X1(1,8),150/4X1(1,9),5/4X1(1,10),3 | 00104700 |
| INITIAL | X189,430000 | 00104900 |
| INITIAL | X190,420 | 00105000 |
| INITIAL | 446(16,1-3),1200/446(16,4-6),2400/446(16,7-10),1200 | 00105600 |
| INITIAL | 446(16,11),500/446(17,1),2157/446(17,2),2121 | 00105610 |
| INITIAL | 446(17,3),2105/446(17,4),2146/446(17,5),2147 | 00105620 |
| INITIAL | 446(17,6),2133/446(17,7),1914/446(17,8),1915 | 00105630 |
| INITIAL | 446(17,9-10),1932/446(17,11),9402 | 00105640 |
| INITIAL | 446(18,1-11),4 | 00105650 |
| INITIAL | X194,4 | 0010570 |
| INITIAL | X196,7 | 00105710 |
| INITIAL | X195,230 | 00105720 |
| TEST L | V11,V236,AR417 TEST FOR CALENDAR PMP | 00122010 |
| TEST L | V11,V236,AL421 TEST FOR CALENDAR PMP | 00141410 |
| TEST L | V11,V236,AL425 TEST FOR CALENDAR PMP | 00143010 |
| ASSIGN | 87,0 ZERO JOY TIME SINCE LAST CALENDAR INSPECTION | 00160310 |
| TEST L | V11,V236,AR417 TEST FOR CALENDAR PMP | 00177510 |
| TEST L | V11,V236,AR417 TEST FOR CALENDAR PMP | 00200610 |

TABLE XLII. HLH ALTERNATE MAINTENANCE CONCEPT C

| | | | | | | |
|----------|---|--|---------|----------|----------|-----------------|
| 1 | 0000002 | 5500005 | 0000000 | 20000111 | 00000010 | 000000000023000 |
| 17 | 00000121 | 0000000 | | | | 00023500 |
| 2 | 20010610 | 000100 | | | | 00025100 |
| 10. | FUNCTION | R41,02 | | | | 00028000 |
| 0.500000 | 0.000000 | | | | | 00028500 |
| 0 | | | | | | 00028600 |
| 0 | | | | | | 00028700 |
| 0 | | | | | | 00028800 |
| 50. | FUNCTION | R41,02 | | | | 00103200 |
| 0.000001 | 0.000002 | | | | | 00103300 |
| 0 | | | | | | 00103400 |
| 0 | | | | | | 00104310 |
| 0 | MAINTENANCE CONCEPT - ALTERNATE C - PHASED 100 MR P40 - POST/PRE FLIGHT | | | | | 00104320 |
| 0 | | | | | | 00104330 |
| | INITIAL | 4X1(1,2),30000/4X1(2,1),30/4X1(3,1),40/4X1(5,1),6720 | | | | 00104400 |
| | INITIAL | 4X1(10,1),20/4X1(4,6),30000 | | | | 00104500 |
| | INITIAL | 4X1(11,1),5 | | | | 00104600 |
| | INITIAL | 4X1(1,0),40/4X1(1,0),5/4X1(1,10),5 | | | | 00104700 |
| | INITIAL | X100,41000 | | | | 00104900 |
| | INITIAL | X100,420 | | | | 00105000 |

TABLE XLIII. HLH ALTERNATE MAINTENANCE CONCEPT D

| | | | |
|----------|--|-------------------------|-----------------|
| 0 | CHANGES TO INCORPORATE CALENDAR INSPECTION/INTERVALS | | 00002710 |
| 10 | VARIABLE: $(441+1000+441) \times K195$ | INITIAL: DAYS SINCE PMP | 00002800 |
| 11 | VARIABLE: $(P47+(C1/240)) \times K195$ | DAYS SINCE PMP | 00002900 |
| 236 | VARIABLE: $K195-K196$ | PMP CALENDAR WINDOW | 00019910 |
| 1 | 00000002 | 5500005 | 0002998 |
| 17 | 00000121 | 0000000 | 75000011 |
| 2 | 20010316 | 200112 | 00000016 |
| 18 | FUNCTION | 441,32 | 750000000023400 |
| 0,500004 | 0,000045 | | 00023500 |
| 0 | | | 00025100 |
| 0 | | | 00028400 |
| 0 | | | 00028500 |
| 0 | | | 00028600 |
| 0 | | | 00028700 |
| 0 | | | 00028800 |
| 50 | FUNCTION | 441,32 | 00028900 |
| 0,50001 | 0,00002 | | 00103200 |
| 0 | | | 00103300 |
| 0 | | | 00103400 |
| 0 | | | 00103500 |
| 0 | MAINT. CONCEPT ALR. D | 17 WEEK PMP | 00103600 |
| INITIAL: | $441(1,2), 220/441(2,1), 100/441(3,1), 120/441(5,1), 6720$ | | 00104310 |
| INITIAL: | $441(10,1), 20/441(4,6), 35000$ | | 00104400 |
| INITIAL: | $441(11,1), 3$ | | 00104500 |
| INITIAL: | $441(1,8), 120/441(1,9), 5/441(1,10), 3$ | | 00104600 |
| INITIAL: | $K199, <30000$ | | 00104700 |
| INITIAL: | $K199, <20$ | | 00104900 |
| INITIAL: | $446(16,1-3), 2000/446(16,4-6), 3000/446(16,7-10), 2000$ | | 00105000 |
| INITIAL: | $446(16,11), 2030/446(17,1), 2157/446(17,2), 2121$ | | 00105600 |
| INITIAL: | $446(17,3), 2105/446(17,4), 2106/446(17,5), 2147$ | | 00105610 |
| INITIAL: | $446(17,6), 2130/446(17,7), 1910/446(17,8), 1915$ | | 00105620 |
| INITIAL: | $446(17,9), 1932/446(17,10), 1932/446(17,11), 0402$ | | 00105630 |
| INITIAL: | $446(18,1-11), 3$ | | 00105640 |
| INITIAL: | $K196, 7$ | | 00105650 |
| INITIAL: | $K195, 119$ | | 001057:0 |
| TEST L: | V11, V236, AR417 | TEST FOR CALENDAR PMP | 00105720 |
| TEST L: | V11, V236, AL421 | TEST FOR CALENDAR PMP | 00122810 |
| TEST L: | V11, V236, AL45 | TEST FOR CALENDAR PMP | 00141410 |
| ASSIGN: | 47,0 | | 00143010 |
| TEST L: | V11, V236, AR417 | TEST FOR CALENDAR PMP | 00160310 |
| TEST L: | V11, V236, AR417 | TEST FOR CALENDAR PMP | 00177510 |
| | | | 00200610 |

APPENDIX III
RESULTS OF COMPARATIVE ANALYSES

Tables XLIV and XLV summarize the results of the CH-47C and HLH maintenance concept comparative analyses. Discussion and analysis of these data are contained in the Comparative Analysis section.

CH-47C

Twenty simulations were run for the CH-47C comparative analysis. These computer runs were typical of all maintenance concept/mission profile combinations.

HLH

Twenty simulations were run for the HLH comparative analysis. These computer runs were representative of all maintenance concept/mission profile combinations.

TABLE XLIV. CH-47 COMPARATIVE ANALYSES

| BASIC MISSION: 16 AIRCRAFT, 1.5 HOURS/FLIGHT, 1512 FLIGHTS SCHEDULED | | | | | |
|--|---------|---------|---------|---------|---------|
| Output Parameters | BASIC | A | B | C | D |
| 1 Total number of missions demanded | 1512 | 1512 | 1512 | 1512 | 1512 |
| 2 Total number of missions completed | 1345 | 1432 | 1438 | 1229 | 1278 |
| 3 Total utilization | 2017.5 | 2148.0 | 2157.0 | 1843.5 | 1917.0 |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 1318 | 1392 |
| 5 Total number of daily inspections | 635 | 549 | 568 | 0 | 404 |
| 6 Total number of PFI inspections | 67 | 182 | 1139 | 949 | 996 |
| 7 Total number of PFP inspections | 19 | 51 | 2 | 19 | 7 |
| 8 Total preflight WH | 0 | 0 | 0 | 1318.00 | 835.2 |
| 9 Total daily WH | 3048.0 | 219.60 | 2726.4 | 0 | 808.0 |
| 10 Total PFI WH | 797.3 | 1592.5 | 341.7 | 569.40 | 3984.0 |
| 11 Total PFP WH | 855.0 | 892.5 | 234.0 | 199.50 | 630.0 |
| 12 Total unscheduled maintenance actions | 2568 | 2521 | 2857 | 2548 | 2707 |
| 13 Total scheduled maintenance actions | 55 | 53 | 33 | 54 | 114 |
| 14 Total unscheduled WH | 3268.71 | 3219.58 | 3806.0 | 3504.35 | 3469.64 |
| 15 Total scheduled WH | 5284.5 | 3382.25 | 3621.43 | 734.43 | 7203.23 |
| 16 Total unscheduled EMT | 3531.1 | 4015.9 | 4396.1 | 3673.7 | 5117.0 |
| 17 Total scheduled EMT | 621.3 | 1435.1 | 598.4 | 720.5 | 4269.2 |
| 18 Total WH/FH | 4.07 | 2.9 | 3.3 | 2.9 | 5.38 |
| 19 NORM delay | 4152.4 | 5451.0 | 4994.5 | 4393.2 | 9386.2 |
| 20 Total air aborts | 64 | 71 | 70 | 59 | 52 |
| 21 No. maintenance actions inflight abort | 65 | 75 | 71 | 60 | 52 |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 669 | 635 |
| 23 No. maintenance actions inflight | 68 | 104 | 112 | 77 | 90 |
| 24 No. maintenance actions during PFI | 423 | 1224 | 717 | 419 | 528 |
| 25 No. maintenance actions at daily | 739 | 523 | 1803 | 0 | 920 |
| 26 No. maintenance actions at PFP | 1233 | 595 | 154 | 1323 | 482 |
| 27 Personnel delays | 6044 | 3389 | 1556 | 5091 | 4530 |
| 28 Malfunctions per Flight Hour | 1.3 | 1.2 | 1.3 | 1.4 | 1.4 |
| 29 Availability | 80.69 | 74.65 | 76.77 | 80.04 | 56.35 |
| Index of merit | .81 | .86 | .86 | .76 | .74 |
| $I.O.M = (2/1) \cdot (.75) + (29) \cdot (.15) + (18) \cdot 1 \cdot (.10)$ | | | | | |
| Maintenance Concepts Basic: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) A: Firm (daily), 10-hour inspection (PMI), phased periodic (50 hour PMP) B: Turnaround/servicing (PMI), daily, calendar - periodic (PMP) C: Preflight, postflight (PMI), phased inspection (PMP) D: Preflight, postflight (PMI), daily, calendar - periodic (PMP) | | | | | |

| TABLE XLIV. Continued | | | | | |
|--|---------|---------|---------|---------|---------|
| MISSION 1: 16 AIRCRAFT, 1.5 HOURS/FLIGHT, 3920 FLIGHTS SCHEDULED | | | | | |
| Output Parameters | BASIC | A | B | C | D |
| 1 Total number of missions demanded | 3920 | 3920 | 3920 | 3920 | 3920 |
| 2 Total number of missions completed | 2289 | 2385 | 2398 | 2602 | 1713 |
| 3 Total utilization | 3433.5 | 3577.5 | 3597.0 | 3903 | 2569 |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 2774 | 1803 |
| 5 Total number of daily inspections | 416 | 678 | 446 | 0 | 390 |
| 6 Total number of PMI inspections | 111 | 307 | 1859 | 1990 | 1324 |
| 7 Total number of PMP inspections | 33 | 77 | 2 | 40 | 7 |
| 8 Total preflight WH | 0 | 0 | 0 | 2774 | 1081.8 |
| 9 Total daily WH | 1996.8 | 271.2 | 2140.8 | 0 | 780.0 |
| 10 Total PMI WH | 1320.9 | 2686.25 | 557.7 | 1194 | 5296.0 |
| 11 Total PMP WH | 1485.0 | 1347.50 | 234.0 | 420 | 630.0 |
| 12 Total unscheduled maintenance actions | 4382 | 4322 | 4956 | 4703 | 3500 |
| 13 Total scheduled maintenance actions | 84 | 78 | 33 | 101 | 114 |
| 14 Total unscheduled WH | 5845.17 | 5829.81 | 6458.52 | 6316.65 | 4359.94 |
| 15 Total scheduled WH | 6080.11 | 5334.66 | 3459.82 | 5373.74 | 8941.95 |
| 16 Total unscheduled EMT | 7746.9 | 8331.7 | 9124.3 | 5614.0 | 5926.2 |
| 17 Total scheduled EMT | 1392.9 | 2817.9 | 1620.0 | 4265.7 | 6230.0 |
| 18 Total WH/PH | 3.3 | 3.0 | 2.7 | 2.87 | 5.02 |
| 19 NORM delay | 9139.8 | 11149.6 | 10744.3 | 9879.7 | 12156.2 |
| 20 Total air aborts | 109 | 113 | 120 | 119 | 68 |
| 21 No. maintenance actions inflight abort | 110 | 118 | 120 | 121 | 68 |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 671 | 813 |
| 23 No. maintenance actions inflight | 177 | 172 | 171 | 179 | 135 |
| 24 No. maintenance actions during PMI | 743 | 2018 | 2954 | 959 | 725 |
| 25 No. maintenance actions at daily | 1011 | 539 | 1547 | 0 | 1367 |
| 26 No. maintenance actions at PMP | 2341 | 1475 | 164 | 2773 | 392 |
| 27 Personnel delays | 7701 | 6951 | 3841 | 8499 | 6715 |
| 28 Malfunctions per Flight Hour | 1.3 | 1.2 | 1.4 | 1.2 | 1.4 |
| 29 Availability | 57.49 | 48.15 | 50.03 | 54.05 | 43.47 |
| Index of merit | .55 | .56 | .57 | .61 | .41 |
| $I.O.M = (2/1) - (.75) + (30) - (.15) + (18) - 1 - (.10)$ | | | | | |
| Maintenance Concepts | | | | | |
| Basic: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) | | | | | |
| A: Firm (daily), 10-hour inspection (PMI), phased periodic (50 hour PMP) | | | | | |
| B: Turnaround/servicing (PMP), daily, calendar - periodic (PMP) | | | | | |
| C: Preflight, postflight (PMI), phased inspection (PMP) | | | | | |
| D: Preflight, postflight (PMI), daily, calendar - periodic (PMP) | | | | | |

| TABLE XLIV. Continued | | | | | |
|---|---------|---------|---------|---------|---------|
| MISSION 2: 11 AIRCRAFT, 1.5 HOURS/FLIGHT, 504 FLIGHTS SCHEDULED | | | | | |
| Output Parameters | BASIC | A | B | C | D |
| 1 Total number of missions demanded | 504 | 504 | 504 | 504 | 504 |
| 2 Total number of missions completed | 473 | 483 | 477 | 483 | 470 |
| 3 Total utilization | 709.5 | 724.5 | 715.5 | 724.5 | 705 |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 517 | 496 |
| 5 Total number of daily inspections | 371 | 264 | 502 | 0 | 335 |
| 6 Total number of PMI inspections | 21 | 63 | 373 | 379 | 366 |
| 7 Total number of PMP inspections | 10 | 19 | 2 | 10 | 6 |
| 8 Total preflight WPH | 0 | 0 | 0 | 517.00 | 297.6 |
| 9 Total daily WPH | 1780.8 | 105.6 | 2409.6 | 0 | 670.0 |
| 10 Total PMI WPH | 249.9 | 551.25 | 111.9 | 227.4 | 1464.0 |
| 11 Total PMP WPH | 450.0 | 332.50 | 234.0 | 105.0 | 540.0 |
| 12 Total unscheduled maintenance actions | 1078 | 853 | 976 | 900 | 953 |
| 13 Total scheduled maintenance actions | 37 | 22 | 33 | 37 | 98 |
| 14 Total unscheduled WPH | 1478.3 | 1130.57 | 1342.03 | 1286.27 | 1273.03 |
| 15 Total scheduled WPH | 2881.47 | 1150.57 | 3160.0 | 1343.15 | 4101.62 |
| 16 Total unscheduled EMT | 791.2 | 859.7 | 1980.1 | 1837.8 | 1416.4 |
| 17 Total scheduled EMT | 190.7 | 563.5 | 201.0 | 210.8 | 1120.9 |
| 18 Total WPH/FH | 5.85 | 3.0 | 6.07 | 3.5 | 7.38 |
| 19 NRP delay | 981.9 | 1423.2 | 2181.1 | 2048.6 | 2537.3 |
| 20 Total air starts | 28 | 21 | 25 | 21 | 20 |
| 21 No. maintenance actions inflight abort | 28 | 22 | 25 | 21 | 20 |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 31 | 120 |
| 23 No. maintenance actions inflight | 31 | 34 | 22 | 27 | 34 |
| 24 No. maintenance actions during PMI | 134 | 407 | 272 | 91 | 119 |
| 25 No. maintenance actions at daily | 135 | 180 | 503 | 0 | 218 |
| 26 No. maintenance actions at PMP | 750 | 210 | 154 | 730 | 442 |
| 27 Personnel delays | 2216 | 661 | 771 | 1582 | 1709 |
| 28 Malfunctions per flight hour | 1.5 | 1.2 | 1.4 | 1.2 | 1.4 |
| 29 Availability | 93.35 | 90.37 | 85.24 | 86.14 | 82.83 |
| Index of merit | .86 | .89 | .85 | .88 | .84 |
| $I.O.M. = (2/1) - (.75) + (29) - (.15) + (18) - 1 - (.10)$ | | | | | |
| Maintenance Concepts | | | | | |
| Basic: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) A: Firm (daily), 10-hour inspection (PMI), phased periodic (50 hour PMP) B: Turnaround/servicing (PMP), daily, calendar - periodic (PMP) C: Preflight, postflight (PMI), phased inspection (PMP) D: Preflight, postflight (PMI), daily, calendar - periodic (PMP) | | | | | |

TABLE XLIV. Continued

MISSION 3: 3 AIRCRAFT, 1.5 HOURS/FLIGHT,
560 FLIGHTS SCHEDULED

| Output Parameters | BASIC | A | B | C | D | Maintenance Concept |
|---|---------|---------|---------|---------|---------|---------------------|
| 1 Total number of missions demanded | 560 | 560 | 560 | 560 | 560 | |
| 2 Total number of missions completed | 431 | 485 | 464 | 499 | 386 | |
| 3 Total utilization | 676.5 | 727.5 | 696 | 748.5 | 579 | |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 533 | 408 | |
| 5 Total number of daily inspections | 104 | 136 | 113 | 0 | 116 | |
| 6 Total number of PMI inspections | 23 | 52 | 352 | 383 | 300 | |
| 7 Total number of PMP inspections | 6 | 15 | 1 | 8 | 1 | |
| 8 Total preflight MPH | 0 | 0 | 0 | 533.0 | 244.8 | |
| 9 Total daily MPH | 499.2 | 54.4 | 542.4 | 0 | 232.0 | |
| 10 Total PMI MPH | 273.7 | 542.5 | 105.0 | 229.8 | 1200.0 | |
| 11 Total PMP MPH | 270.0 | 262.5 | 117.0 | 84.0 | 90.00 | |
| 12 Total unscheduled maintenance actions | 939 | 882 | 833 | 1005 | 668 | |
| 13 Total scheduled maintenance actions | 15 | 15 | 16 | 18 | 16 | |
| 14 Total unscheduled MPH | 1149.14 | 1225.71 | 1180.06 | 1278.28 | 988.28 | |
| 15 Total scheduled MPH | 1142.14 | 993.38 | 947.39 | 1028.92 | 1950.76 | |
| 16 Total unscheduled EMT | 674.5 | 1076.6 | 1058.3 | 864.5 | 1006.4 | |
| 17 Total scheduled EMT | 203.0 | 529.9 | 235.6 | 446.9 | 860.9 | |
| 18 Total MPH/PM | 3.3 | 2.9 | 3.0 | 3.0 | 4.91 | |
| 19 NMEM delay | 877.5 | 1606.5 | 1293.9 | 1311.4 | 1867.3 | |
| 20 Total air aborts | 20 | 21 | 15 | 19 | 17 | |
| 21 No. maintenance actions inflight abort | 20 | 22 | 15 | 20 | 17 | |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 286 | 91 | |
| 23 No. maintenance actions inflight | 33 | 23 | 24 | 32 | 22 | |
| 24 No. maintenance actions during PMP | 156 | 409 | 350 | 111 | 209 | |
| 25 No. maintenance actions at daily | 238 | 193 | 377 | 0 | 242 | |
| 26 No. maintenance actions at PMP | 492 | 235 | 67 | 556 | 87 | |
| 27 Personnel delays | 1056 | 623 | 343 | 1173 | 456 | |
| 28 Malfunctions per Flight Hour | 1.4 | 1.2 | 1.2 | 1.3 | 1.2 | |
| 29 Availability | 78.23 | 60.15 | 67.9 | 67.47 | 53.68 | |
| Index of merit | .75 | .77 | .76 | .81 | .62 | |
| $I.O.M = (2/1) \cdot (.75) + (.29) \cdot (.15) + (18) \cdot (-1) \cdot (.10)$ | | | | | | |

Maintenance Concepts

- Basic: Daily, intermediate (25 hour PMI), periodic (100 hour PMP)
 A: Firm (daily), 10-hour inspection (PMI), phased periodic (50 hour PMP)
 B: Turnaround/servicing (PMI), daily, calendar - periodic (PMP)
 C: Preflight, postflight (PMI), phased inspection (PMP)
 D: Preflight, postflight (PMI), daily, calendar - periodic (PMP)

TABLE XLV. HLH COMPARATIVE ANALYSES

| | | BASIC MISSION: 9 AIRCRAFT, 2.0 HOURS/FLIGHT, 504 FLIGHTS SCHEDULED | | | | | Maintenance Concept |
|---|--|---|---------|--------|--------|--------|------------------------|
| Output Parameters | | BASIC | A | B | C | D | |
| 1 | Total number of missions demanded | 504 | 504 | 504 | 504 | 504 | |
| 2 | Total number of missions completed | 492 | 451 | 463 | 489 | 474 | |
| 3 | Total utilization | 984 | 902 | 926 | 978.0 | 948 | |
| 4 | Total number of preflight inspections | 0 | 0 | 0 | 565 | 548 | |
| 5 | Total number of daily inspections | 294 | 412 | 340 | 0 | 367 | |
| 6 | Total number of PwI inspections | 88 | 29 | 472 | 554 | 483 | |
| 7 | Total number of PwP inspections | 20 | 10 | 2 | 9 | 6 | |
| 8 | Total preflight WPH | 0 | 0 | 0 | 678.0 | 548.0 | |
| 9 | Total daily WPH | 176.4 | 2472.00 | 884.0 | 0 | 880.8 | |
| 10 | Total PwI WPH | 880.0 | 464.0 | 283.2 | 554 | 483.0 | |
| 11 | Total PwP WPH | 400.0 | 640.0 | 300 | 108.0 | 720.0 | |
| 12 | Total unscheduled maintenance actions | 367 | 1144 | 1266 | 1000 | 824 | |
| 13 | Total scheduled maintenance actions | 0 | 0 | 0 | 0 | 0 | |
| 14 | Total unscheduled WPH | 3971.0 | 4265.6 | 5541.7 | 3673.0 | 3845.5 | |
| 15 | Total scheduled WPH | 1456.4 | 3576.0 | 1467.2 | 1340.0 | 2631.8 | |
| 16 | Total unscheduled EMT | 1152.4 | 1231.7 | 2079.9 | 1245.0 | 1394.0 | |
| 17 | Total scheduled EMT | 1011.9 | 880.8 | 1536.8 | 1425.9 | 1609.5 | |
| 18 | Total WPH/PH | 5.25 | 8.63 | 7.42 | 4.97 | 6.65 | |
| 19 | NORM delay | 2196.3 | 2112.3 | 3616.7 | 2670.9 | 2943.5 | |
| 20 | Total air aborts | 12 | 9 | 14 | 11 | 13 | |
| 21 | No. maintenance actions inflight abort | 14 | 11 | 14 | 11 | 13 | |
| 22 | No. maintenance actions at preflight | 0 | 0 | 0 | 259 | 231 | |
| 23 | No. maintenance actions inflight | 41 | 50 | 43 | 54 | 33 | |
| 24 | No. maintenance actions during PwI | 470 | 436 | 843 | 286 | 172 | |
| 25 | No. maintenance actions at daily | 103 | 152 | 265 | 0 | 109 | |
| 26 | No. maintenance actions at PwP | 359 | 495 | 101 | 390 | 266 | |
| 27 | Personnel delays | 1759 | 2878 | 1942 | 1564 | 1934 | |
| 28 | Malfunctions per Flight Hour | 1.00 | 1.27 | 1.37 | 1.02 | .87 | |
| 29 | Availability | 81.85 | 82.53 | 70.10 | 77.91 | 75.66 | |
| Index of merit | | .87 | .81 | .81 | .86 | .83 | |
| I.O.M. = (2/1) . (.75) + (29) . (.15) + (18) -1 . (.10) | | | | | | | |
| HLH Maintenance Concepts | | | | | | | |
| Basic: Firm (daily), 10-hour inspection, 50 hour phased periodic | | | | | | | |
| A: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) | | | | | | | |
| B: Turnaround/servicing (PMI), daily, calendar periodic (34 weeks PMP) | | | | | | | |
| C: Preflight, postflight (PMI), phased inspection (100 hours PMP) | | | | | | | |
| D: Preflight, postflight (PMI), daily, calendar periodic (17 weeks PMP) | | | | | | | |

TABLE XLV. Continued

| MISSION 1: 3 AIRCRAFT, 2.0 HOURS/FLIGHT, 560 FLIGHTS SCHEDULED | | | | | | |
|---|--------|--------|--------|--------|--------|---------------------|
| Output Parameters | | | | | | |
| | BASIC | A | B | C | D | Maintenance Concept |
| 1 Total number of missions demanded | 560 | 560 | 560 | 560 | 560 | |
| 2 Total number of missions completed | 354 | 390 | 367 | 326 | 326 | |
| 3 Total utilization | 708 | 780 | 734 | 652 | 688 | |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 339 | 354 | |
| 5 Total number of daily inspections | 112 | 115 | 141 | 0 | 141 | |
| 6 Total number of PMI inspections | 62 | 25 | 370 | 329 | 347 | |
| 7 Total number of PMP inspections | 15 | 8 | 0 | 6 | 0 | |
| 8 Total preflight $\frac{1994}{1994}$ | 0 | 0 | 0 | 406.8 | 354 | |
| 9 Total daily $\frac{1994}{1994}$ | 67.2 | 690 | 366.6 | 0 | 338.4 | |
| 10 Total PMI $\frac{1994}{1994}$ | 620.0 | 400.0 | 222.0 | 329.0 | 347.0 | |
| 11 Total PMP $\frac{1994}{1994}$ | 300.0 | 512 | 0 | 72.0 | 0 | |
| 12 Total unscheduled maintenance actions | 732 | 893 | 807 | 719 | 628 | |
| 13 Total scheduled maintenance actions | 0 | 0 | 0 | 0 | 0 | |
| 14 Total unscheduled $\frac{1994}{1994}$ | 3089.2 | 3479.8 | 3273.0 | 3031.4 | 2643.7 | |
| 15 Total scheduled $\frac{1994}{1994}$ | 987.2 | 1602.0 | 588.6 | 807.8 | 1039.4 | |
| 16 Total unscheduled EMT | 837.5 | 843.8 | 944.2 | 896.3 | 752.3 | |
| 17 Total scheduled EMT | 468.4 | 333.9 | 217.7 | 287.6 | 209.6 | |
| 18 Total $\frac{1994}{1994}$ /PH | 5.45 | 6.31 | 5.23 | 5.72 | 5.27 | |
| 19 NORM delay | 1305.9 | 1177.7 | 1161.9 | 1183.9 | 961.9 | |
| 20 Total air aborts | 11 | 9 | 4 | 7 | 10 | |
| 21 No. maintenance actions inflight abort | 12 | 9 | 4 | 7 | 10 | |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 156 | 149 | |
| 23 No. maintenance actions inflight | 36 | 39 | 42 | 32 | 45 | |
| 24 No. maintenance actions during PMI | 352 | 387 | 653 | 278 | 385 | |
| 25 No. maintenance actions at daily | 46 | 51 | 108 | 0 | 39 | |
| 26 No. maintenance actions at PMP | 286 | 407 | 0 | 246 | 0 | |
| 27 Personnel delays | 1111 | 1818 | 247 | 668 | 243 | |
| 28 Malfunctions per Flight Hour | 1.03 | 1.14 | 1.10 | 1.10 | .91 | |
| 29 Availability | 67.61 | 70.79 | 71.18 | 70.63 | 76.14 | |
| Index of merit | .59 | .64 | .62 | .56 | .59 | |
| $I.O.M. = (2/1) \cdot (.75) + (29) \cdot (.15) + (18) \cdot (-1) \cdot (.10)$ | | | | | | |
| HLH Maintenance Concepts | | | | | | |
| Basic: Firm (daily), 10-hour inspection, 50 hour phased periodic | | | | | | |
| A: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) | | | | | | |
| B: Turnaround/servicing (PMI), daily, calendar periodic (34 weeks PMP) | | | | | | |
| C: Preflight, postflight (PMI), phased inspection (100 hours PMP) | | | | | | |
| D: Preflight, postflight (PMI), daily, calendar periodic (17 weeks PMP) | | | | | | |

| TABLE XLV. Continued | | | | | |
|---|--------|--------|--------|--------|--------|
| MISSION 2: 9 AIRCRAFT, 2.0 HOURS/FLIGHT, 336 FLIGHTS SCHEDULED | | | | | |
| Output Parameters | BASIC | A | B | C | D |
| 1 Total number of missions demanded . | 336 | 336 | 336 | 336 | 336 |
| 2 Total number of missions completed . | 332 | 325 | 328 | 326 | 321 |
| 3 Total utilization | 664 | 650 | 656 | 652.0 | 642 |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 398 | 394 |
| 5 Total number of daily inspections | 321 | 346 | 340 | 0 | 326 |
| 6 Total number of PMI inspections | 57 | 22 | 337 | 391 | 330 |
| 7 Total number of PMP inspections | 16 | 6 | 2 | 8 | 6 |
| 8 Total preflight MPM | 0 | 0 | 0 | 477.6 | 394 |
| 9 Total daily MPM | 192.6 | 2076.0 | 884.0 | 0 | 782.4 |
| 10 Total PMI MPM | 570.0 | 352.0 | 202.2 | 391.0 | 330.0 |
| 11 Total PMP MPM | 320.0 | 384.0 | 300 | 96.0 | 720 |
| 12 Total unscheduled maintenance actions | 657 | 687 | 814 | 756 | 673 |
| 13 Total scheduled maintenance actions | 0 | 0 | 0 | 0 | 0 |
| 14 Total unscheduled MPM | 2710.0 | 2825.3 | 2953.8 | 3286.7 | 2898.1 |
| 15 Total scheduled MPM | 1082.6 | 2812.0 | 1386.2 | 964.6 | 2226.4 |
| 16 Total unscheduled EMT | 676.3 | 751.3 | 904.0 | 919.6 | 830.9 |
| 17 Total scheduled EMT | 458.4 | 208.5 | 421.6 | 573.5 | 801.2 |
| 18 Total MPM/PM | 5.44 | 8.4 | 6.49 | 6.3 | 7.7 |
| 19 NORM delay | 1134.7 | 959.8 | 1325.6 | 1493.1 | 1632.1 |
| 20 Total air aborts | 4 | 9 | 8 | 8 | 11 |
| 21 No. maintenance actions inflight abort | 4 | 9 | 8 | 8 | 11 |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 172 | 174 |
| 23 No. maintenance actions inflight | 32 | 20 | 41 | 25 | 21 |
| 24 No. maintenance actions during PMI | 305 | 346 | 398 | 174 | 111 |
| 25 No. maintenance actions at daily | 16 | 26 | 266 | 0 | 92 |
| 26 No. maintenance actions at PMP | 300 | 286 | 101 | 377 | 264 |
| 27 Personnel delays | 1241 | 1715 | 1098 | 1134 | 1283 |
| 28 Malfunctions per Flight Hour | .99 | 1.06 | 1.24 | 1.16 | 1.05 |
| 29 Availability | 90.61 | 92.06 | 89.04 | 87.65 | 86.5 |
| Index of merit | .89 | .88 | .88 | .88 | .86 |
| $I.O.M. = (2/1) \cdot (.75) + (29) \cdot (.15) + (18) \cdot (-1) \cdot (.10)$ | | | | | |
| HLH Maintenance Concepts Basic: Firm (daily), 10-hour inspection, 50 hour phased periodic A: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) B: Turnaround/servicing (PMI), daily, calendar periodic (34 weeks PMP) C: Preflight, postflight (PMI), phased inspection (100 hours PMP) D: Preflight, postflight (PMI), daily, calendar periodic (17 weeks PMP) | | | | | |

TABLE XLV. Continued

| MISSION 3: 9 AIRCRAFT, 5.0 HOURS/FLIGHT, 1120 FLIGHTS SCHEDULED | | | | | |
|--|--------|--------|--------|--------|--------|
| Output Parameters | BASIC | A | B | C | D |
| 1 Total number of missions demanded | 1120 | 1120 | 1120 | 1120 | 1120 |
| 2 Total number of missions completed | 421 | 360 | 348 | 445 | 445 |
| 3 Total utilization | 2105 | 1800 | 1840 | 2225 | 2225 |
| 4 Total number of preflight inspections | 0 | 0 | 0 | 480 | 483 |
| 5 Total number of daily inspections | 159 | 167 | 125 | 0 | 204 |
| 6 Total number of PMP inspections | 193 | 61 | 376 | 451 | 453 |
| 7 Total number of PMP inspections | 47 | 2 | 2 | 23 | 6 |
| 8 Total preflight $\frac{WH}{PH}$ | 0 | 0 | 0 | 576.0 | 483 |
| 9 Total daily $\frac{WH}{PH}$ | 95.4 | 1002.0 | 325.0 | 0 | 489.6 |
| 10 Total PMP $\frac{WH}{PH}$ | 1930.0 | 976.0 | 225.6 | 451.0 | 453.0 |
| 11 Total PMP $\frac{WH}{PH}$ | 940.0 | 1280.0 | 300 | 276.0 | 720.0 |
| 12 Total unscheduled maintenance actions | 1999 | 1885 | 2303 | 2465 | 1907 |
| 13 Total scheduled maintenance actions | 0 | 0 | 0 | 0 | 0 |
| 14 Total unscheduled $\frac{WH}{PH}$ | 6765.7 | 6953.0 | 9431.2 | 8109.4 | 7471.1 |
| 15 Total scheduled $\frac{WH}{PH}$ | 2965.4 | 3258.0 | 850.6 | 1303.0 | 2145.6 |
| 16 Total unscheduled $\frac{WH}{PH}$ | 2881.0 | 2220.3 | 4879.2 | 3022.8 | 3068.4 |
| 17 Total scheduled $\frac{WH}{PH}$ | 4240.1 | 4927.2 | 3246.2 | 2845.3 | 3255.4 |
| 18 Total $\frac{WH}{PH}/PH$ | 4.14 | 5.37 | 5.49 | 3.99 | 4.2 |
| 19 $\frac{WH}{PH}$ delay | 7121.1 | 7147.5 | 8125.4 | 5868.1 | 6323.8 |
| 20 Total air aborts | 6 | 8 | 11 | 13 | 14 |
| 21 No. maintenance actions inflight abort | 8 | 8 | 11 | 14 | 14 |
| 22 No. maintenance actions at preflight | 0 | 0 | 0 | 211 | 231 |
| 23 No. maintenance actions inflight | 38 | 30 | 31 | 51 | 37 |
| 24 No. maintenance actions during PMP | 1012 | 909 | 1578 | 1126 | 525 |
| 25 No. maintenance actions at daily | 61 | 58 | 632 | 0 | 833 |
| 26 No. maintenance actions at PMP | 880 | 880 | 51 | 1063 | 267 |
| 27 Personnel delays | 4602 | 4951 | 5222 | 5230 | 4659 |
| 28 Malfunctions per Flight Hour | .95 | 1.05 | 1.25 | 1.11 | 1.17 |
| 29 Availability | 41.15 | 40.91 | 32.82 | 51.5 | 47.71 |
| Index of merit | .37 | .32 | .30 | .40 | .39 |
| $I.O.M. = (2/1) \cdot (.75) + (29) \cdot (.15) + (18) \cdot (-1) \cdot (-.10)$ | | | | | |
| HLH Maintenance Concepts Basic: Firm (daily), 10-hour inspection, 50 hour phased periodic A: Daily, intermediate (25 hour PMI), periodic (100 hour PMP) B: Turnaround/servicing (PMI), daily, calendar periodic (34 weeks PMP) C: Preflight, postflight (PMI), phased inspection (100 hours PMP) D: Preflight, postflight (PMI), daily, calendar periodic (17 weeks PMP) | | | | | |

APPENDIX IV
CH-47C R&M INPUT DATA BASE

Tables XLVI through LVI have been employed in the development of the R&M function tables of the CH47C R&M simulation model.

Included in the data presented in this appendix are all primary and non-primary malfunctions, encountered against the various CH-47C components/subsystems, as well as the maintenance actions against each system. Maintenance actions include things like visual checks and walk around safety checks, which are frequently not accounted as maintenance against a component. Furthermore these tasks do not in themselves impart aircraft operations.

The total malfunction rate used in the simulation excluded maintenance actions. Thus malfunctions are generated at a rate of approximately 1.3 per flight hour.

TABLE XLVI. CH-47C INPUT DATA - AIRFRAME SYSTEM

| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | ENT | Mission Affecting Rate | NORS Delay |
|---|------|-----------------------------|----------------------|--------------|--------------|------|------------------------------|---------------|
| Access panels and doors | 0101 | On aircraft repair | 6.7761 | 1.62 | 1 | 1.62 | - | - |
| | | Unsched. removal & replace. | 3.6300 | 1.38 | 1.2 | 1.15 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Armor and armament | 0102 | On aircraft repair | 2.4200 | 0.44 | 1 | 0.44 | - | - |
| | | Unsched. removal & replace. | 0.2420 | 0.25 | 1 | 0.25 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Basic structure | 0103 | On aircraft repair | 107.9329 | 2.31 | 1 | 2.31 | - | - |
| | | Unsched. removal & replace. | 30.7342 | 0.90 | 3.1 | 0.29 | .4840 | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Cargo ramp, door and actuating mechanisms | 0104 | On aircraft repair | 8.7121 | 1.51 | 1 | 1.51 | - | - |
| | | Unsched. removal & replace. | 2.4200 | 1.18 | 2.4 | 0.49 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Console and instrument panel | 0105 | On aircraft repair | 1.2100 | 0.40 | 1 | 0.40 | - | - |
| | | Unsched. removal & replace. | 0.2420 | 1.70 | 3.4 | 0.50 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Dynamic absorbers | 0106 | On aircraft repair | 0.2420 | 0.33 | 1 | 0.33 | - | - |
| | | Unsched. removal & replace. | 3.6300 | 5.08 | 1 | 5.08 | .2420 | .2420 |
| | | Scheduled removal | - | - | - | - | - | - |
| Entrance doors | 0107 | On aircraft repair | 9.1961 | 0.81 | 1 | 0.81 | - | - |
| | | Unsched. removal & replace. | 1.6940 | 0.59 | 2.7 | 0.22 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Fairings and cowling | 0108 | On aircraft repair | 116.8842 | 1.54 | 1 | 1.54 | - | - |
| | | Unsched. removal & replace. | 68.4898 | 0.59 | 1.5 | 0.39 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Flooring | 0109 | On aircraft repair | 7.9861 | 0.48 | 1 | 0.48 | - | - |
| | | Unsched. removal & replace. | 0.9680 | 2.05 | 2.2 | 0.93 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Hatches | 0110 | On aircraft repair | 2.4200 | 0.22 | 1 | 0.22 | - | - |
| | | Unsched. removal & replace. | 1.4520 | 0.70 | 1.6 | 0.44 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Window assemblies | 0111 | On aircraft repair | 9.6801 | 0.39 | 1 | 0.39 | - | - |
| | | Unsched. removal & replace. | 6.5140 | 3.19 | 1 | 3.19 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Work platforms | 0112 | On aircraft repair | 33.6383 | 0.82 | 1 | 0.82 | - | - |
| | | Unsched. removal & replace. | 15.4881 | 1.63 | 1.9 | 0.86 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |
| Maintenance actions | 0113 | On aircraft repair | 220.4637 | 0.80 | 1 | 0.80 | - | - |
| | | Unsched. removal & replace. | 4.3560 | 1.08 | 1.3 | 0.83 | - | - |
| | | Scheduled removal | - | - | - | - | - | - |

| TABLE XLVII. CH-47C INPUT DATA - COMMUNICATIONS AND NAVIGATION SYSTEM | | | | | | | | | |
|---|------|--|-------------------|--------------|-----------|--------------|------------------------|-----------|---|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | ENT | Mission Affecting Rate | NORS Rate | |
| ADF | 0201 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 | 0.33 | 1.3 | 0.25 | - | - | - |
| HF communications | 0202 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.7260 4.8400 | 0.50 1.43 | 1 1.4 | 0.50 1.02 | - | - | - |
| IFF | 0203 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.2100 2.1780 | 0.72 0.68 | 1 1.2 | 0.72 0.57 | - | - | - |
| Interphone | 0204 | On aircraft repair Unsched. removal & replace. Scheduled removal | 4.3561 3.3880 | 0.88 0.81 | 1 2.3 | 0.88 0.35 | - | - | - |
| Liaison | 0205 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.2100 1.6940 | 0.73 1.46 | 1 1.5 | 0.73 0.97 | - | - | - |
| Marker beacon | 0206 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.7260 0.2420 | 0.42 0.43 | 1 2.5 | 0.42 0.17 | - | - | - |
| OMNI (VOR) | 0207 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.4200 | 0.69 | 1 | 0.69 | - | - | - |
| Remote compass | 0208 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 0.7260 | 1.00 1.00 | 1 1.5 | 1.00 0.67 | - | - | - |
| UHF communication | 0209 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.7260 5.3240 | 0.67 0.91 | 1 1.4 | 0.67 0.65 | - | - | - |
| VGI | 0210 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 | 0.98 | 1.3 | 0.75 | - | - | - |
| Maintenance actions | 0211 | On aircraft repair Unsched. removal & replace Scheduled removal | 20.3282 7.7441 | 0.64 0.68 | 1 2.5 | 0.64 0.27 | - | - | - |

| TABLE XLVIII. CH-47C INPUT DATA - DRIVE SYSTEM | | | | | | | | | |
|---|------|--|------------------------------|----------------------|-----------------|----------------------|------------------------|-----------|--|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MM/Task | Crew Size | EXT | Mission Affecting Rate | MORS Rate | |
| Lubrication | 0301 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 3.3880 14.7621 - | 1.44 1.78 - | 1 1.4 - | 1.44 1.27 - | .9680 | .2420 | |
| Mounts and supports | 0302 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9680 116.4029 0.9680 | 0.50 0.92 8.75 | 1 1.4 1.4 | 0.50 0.66 6.25 | .2420 | - | |
| Shafting | 0303 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 3.3880 6.5341 0.2420 | 0.32 4.85 0.48 | 1 1.9 1.9 | 0.32 2.55 0.25 | .4840 | - | |
| Miscellaneous transmissions | 0304 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 2.9040 8.4701 - | 0.53 1.65 - | 1 1.7 - | 0.53 0.97 - | 3.3880 | - | |
| Maintenance actions | 0305 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 35.4185 - | 0.57 - | 2 - | 0.29 - | - | - | |
| Shaft assembly forward 114D3052-7 | 0306 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 - | 0.33 - | 1 - | 0.33 - | - | - | |
| Shaft assembly sync 02 | 0307 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 - | 0.50 - | 1 - | 0.50 - | - | - | |
| Shaft assembly sync 03 | 0308 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 0.2420 - | 0.33 1.33 - | 1 1.9 - | 0.33 0.70 - | - | - | |
| Shaft assembly sync 03 maintenance action. | 0309 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.7260 - | 0.78 - | 2 - | 0.39 - | - | - | |
| Shaft assembly sync 04 | 0310 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.4840 - | 0.91 - | 1.9 - | 0.48 - | - | - | |
| Shaft assembly aft 114D3070-6 Rotor 08 | 0311 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9680 - | 3.91 - | 1.9 - | 2.06 - | - | - | |
| Shaft assembly aft 08 maintenance action | 0312 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.4840 - | 2.97 - | 2 - | 1.49 - | - | - | |
| Shaft assembly aft 09 114D3070-6 maintenance action | 0313 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.7260 - | 2.97 - | 2 - | 1.49 - | - | - | |

TABLE XLVIII. Continued

| Subsystem Name | MUC | Task Type | Fail Rate 1000 hr | Mech/Task | Crew Size | EMT | Mission Affecting Rate | MORS Rate |
|--|------|--|----------------------|-----------|-----------|-------|------------------------------|--------------|
| Shaft transmission 114D3241-08 Maintenance action | 0314 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 2.25 | 2 | 1.13 | - | - |
| Shaft transmission. 114D3241-09 | 0315 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 1.25 | 1.9 | 0.66 | - | - |
| Shaft transmission 09 Maintenance action | 0316 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 3.40 | 2 | 1.70 | - | - |
| Shaft, RH engine dis 114D3247-1 Maintenance action | 0317 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9680 | 3.46 | 2 | 1.73 | - | - |
| Shaft assembly, aft rotor 114D3250-1 | 0318 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 19.76 | 1.9 | 10.40 | - | - |
| Shaft assembly, aft rotor, 114D3250-1 Maintenance action | 0319 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.7260 | 0.44 | 2 | 0.22 | - | - |
| Shaft assembly, aft rotor 114D3053-4 | 0320 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.4840 | 2.15 | 1.9 | 1.13 | - | - |
| Shaft assembly, aft 114D3053-4 Maintenance action | 0321 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.2100 | 0.27 | 2 | 0.14 | - | - |
| Adapter splined 114D3242-1 | 0322 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 5.00 | 1.9 | 2.63 | - | - |
| Adapter splined 114D3242-1 Maintenance action | 0323 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 0.08 | 2 | 0.04 | - | - |
| Adapter shaft L/H engine 114D3245-1 | 0324 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 0.50 | 1 | 0.50 | - | - |
| Adapter shaft L/H engine Maintenance action | 0325 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 | 0.25 | 2 | 0.13 | - | - |
| Transmission assembly forward 114D1200-3 | 0326 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9680 | 24.05 | 1.7 | 14.62 | - | - |

TABLE XLVIII. Continued

| Subsystem Name | W/C | Task Type | Fail Rate 1000 hr | MMH/ Tact | Crew Size | EMT | Mission Affecting Rate | NORS Rate |
|--|------|--|----------------------|--------------|--------------|-------|------------------------------|--------------|
| Transmission assembly 0327 forward 114D1200-3 Maintenance action | | On aircraft repair Unsched. removal & replace. Scheduled removal | 3.3080 | 4.58 | 2 | 2.29 | - | - |
| Transmission, aft 114D2200-5 | 0328 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 | 48.03 | 1.7 | 28.25 | - | - |
| Transmission, aft 114D2200-5 Maintenance action | 0329 | On aircraft repair Unsched. removal & replace. Scheduled removal | 6.7761 | 1.10 | 2 | 0.55 | - | - |
| Transmission, comp. 114D5200-1 | 0330 | On aircraft repair Unsched. removal & replace Scheduled removal | 0.9680 | 15.88 | 1.7 | 9.34 | - | - |
| Transmission, comp. 114D5200-1 Maintenance action | 0331 | On aircraft repair Unsched. removal & replace. Scheduled removal | 3.1460 | 0.71 | 2 | 0.36 | - | - |
| Transmission assembly 114D6200-1 LH | 0332 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.4520 | 9.00 | 1.7 | 5.29 | - | - |
| Transmission assembly 0333 114D6200-1, LH Maintenance action | | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.7260 | 0.27 | 2 | 0.14 | - | - |
| Transmission assembly 0334 114D6200-1, RH | | On aircraft repair Unsched. removal & replace Scheduled removal | 2.9040 | 6.44 | 1.7 | 3.79 | - | - |
| Transmission assembly 0335 114D6200-1, RH Maintenance action | | On aircraft repair Unsched. removal & replace Scheduled removal | 0.9680 | 0.41 | 2 | 0.21 | - | - |
| Transmission assembly 0336 114D6200-2, LH Maintenance action | | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.0001 | 3.33 | 1.7 | 1.96 | - | - |
| Transmission assembly 0337 114D6200-2, LH Maintenance action | | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.4200 | 0.65 | 2 | 0.33 | - | - |
| Transmission assembly 0338 114D6200-2, PH Maintenance action | | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.0001 | 3.43 | 1.7 | 2.02 | - | - |
| Transmission assembly 0339 114D6200-2 Maintenance action | | On aircraft repair Unsched. removal & replace Scheduled removal | 4.3560 | 0.70 | 2 | 0.35 | - | - |
| | | | 0.4840 | 2.25 | 2 | 1.13 | - | - |

| TABLE XLVIII. Continued | | | | | | | | | |
|--|------|--|-------------------|-----------------|---------------|-----------------|------------------------|-----------|---|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MWH/Task | Crew Size | ZMT | Mission Affecting Rate | NORS Rate | |
| Shaft, quill engine 114D6263-1 | 0340 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.4840 - | - 0.65 - | - 1.7 - | - 0.38 - | - | - | - |
| Shaft assembly, forward, 114R3052-7 Maintenance action | 0341 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.2420 - | - 0.30 - | 2 - - | 0.15 - - | - | - | - |
| Shaft assembly, sync 114D3048-7 Maintenance action | 0342 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 1.09 - | - 1.7 - | - 0.64 - | - | - | - |
| Shaft assembly, aft 114D3070-6, A8 Maintenance action | 0343 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 1.36 - | - 1.7 - | - 0.80 - | - | - | - |
| Shaft transmission 114D3241 Maintenance action | 0344 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 1.28 - | - 1.7 - | - 0.75 - | - | - | - |
| Shaft assembly, aft rotor, 114D3250-1 Maintenance action | 0345 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.7260 - | - 14.43 - | 2 - - | 7.22 - - | - | - | - |
| Adapter assembly, forward drive 114D3067-3 Maintenance action | 0346 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 2.84 - | - 1.7 - | - 1.67 - | - | - | - |
| Adapter, shaft transmission 114D3243-1 | 0347 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 1.70 - | - 1.7 - | - 1.00 - | - | - | - |
| Transmission, forward 114D1200-3 Maintenance action | 0348 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 19.69 - | - 1.7 - | - 11.58 - | - | - | - |
| Transmission, aft 114D2200-5 Maintenance action | 0349 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 17.92 - | - 1.7 - | - 10.54 - | - | - | - |
| Transmission, comb 114D5200-1 Maintenance action | 0350 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.0001 - | - 20.32 - | - 1.7 - | - 11.95 - | - | - | - |
| Transmission engine 114D6200-2 Maintenance action | 0351 | On aircraft repair Unsched. removal & replace. Scheduled removal | - 0.7260 - | - 3.53 - | 2 - - | 1.77 - - | - | - | - |

TABLE XLIX. CH-47C INPUT DATA - ELECTRICAL SYSTEM

| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate |
|---|------|--|----------------------------|----------------------|-----------------|----------------------|------------------------------|--------------|
| AC power supply and distribution | 0401 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 2.6621 4.5980 - | 1.04 0.80 - | 1 1.4 - | 1.04 0.57 - | - | - |
| Cabin and ramp lighting | 0402 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.4840 0.9680 - | 0.29 0.38 - | 1 1.3 - | 0.29 0.29 - | - | - |
| Cockpit lighting | 0403 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 1.2100 0.9680 - | 0.28 0.35 - | 1 1.2 - | 0.28 0.29 - | - | - |
| Console lighting | 0404 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | - 0.7260 - | - 0.08 - | - 1.5 - | - 0.05 - | - | - |
| DC power supply and distribution | 0405 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.7260 1.6940 0.2420 | 0.70 0.32 0.60 | 1 1.5 1.5 | 0.70 0.21 0.40 | .9680 | 1.4520 |
| Formation lights | 0406 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 7.2601 1.9360 - | 0.40 0.44 - | 1 2.9 - | 0.40 0.15 - | - | - |
| Inspection lighting | 0407 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 2.1781 6.5340 - | 0.64 0.21 - | 1 1.3 - | 0.64 0.16 - | - | - |
| Navigation lights and anti-collision | 0408 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.7260 9.4381 - | 1.75 0.69 - | 1 1.4 - | 1.75 0.49 - | - | - |
| Overhead panel lighting | 0409 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.2420 1.4520 - | 1.00 0.17 - | 1 1.4 - | 1.00 0.12 - | - | - |
| Searchlight and landing lights | 0410 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.2420 3.1460 - | 2.00 1.96 - | 1 1.3 - | 2.00 1.51 - | - | - |
| Troop and passenger warning | 0411 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 0.2420 - | 1.00 - | 1 - | 1.00 - | - | - |
| Wires, miscellaneous | 0412 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 21.2962 6.0500 - | 0.58 1.27 - | 2 2.7 - | 0.29 0.47 - | - | .2420 |
| Maintenance actions | 0413 | On aircraft repair Unscheduled, removal & replace. Scheduled removal | 26.1362 0.4840 - | 0.56 0.50 - | 2 2 - | 0.28 0.25 - | - | - |

TABLE L. CN-47C INPUT DATA - EQUIPMENT SYSTEM

| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EXT | Mission Affecting Rate | NORS Rate |
|----------------------------------|------|---|----------------------|--------------|--------------|------|------------------------------|--------------|
| APU | 0501 | On aircraft repair | 1.2100 | 0.58 | 2 | 0.29 | | |
| | | Unscheduled removal & replace. | 2.6620 | 1.14 | 1.7 | 0.67 | .4840 | - |
| | | Scheduled removal | 0.4840 | 0.39 | 1.7 | 0.23 | | |
| Cargo rescue hoist | 0502 | On aircraft repair | 2.6620 | 0.66 | 1 | 0.66 | | |
| | | Unscheduled removal & replace. Scheduled removal | 1.6940 | 1.45 | 2 | 0.72 | - | - |
| Cockpit and cabin seat | 0503 | On aircraft repair | 4.8401 | 1.02 | 1 | 1.02 | | |
| | | Unscheduled removal & replace. Scheduled removal | 2.9040 | 0.30 | 1.1 | 0.27 | - | - |
| Emergency apparatus | 0504 | On aircraft repair | 6.2921 | 0.24 | 1 | 0.24 | | |
| | | Unscheduled removal & replace. Scheduled removal | 5.0820 | 0.26 | 1 | 0.26 | - | - |
| External cargo hook and towing | 0505 | On aircraft repair | 2.4200 | 1.08 | 1 | 1.08 | | |
| | | Unscheduled removal & replace. Scheduled removal | 9.9221 | 1.05 | 1.4 | 0.75 | - | - |
| Furnishings | 0506 | On aircraft repair | 2.4200 | 0.98 | 1 | 0.98 | | |
| | | Unscheduled removal & replace. Scheduled removal | 1.9360 | 0.40 | 1.2 | 0.33 | - | - |
| Heating and ventilation | 0507 | On aircraft repair | 3.6300 | 0.86 | 1 | 0.86 | | |
| | | Unscheduled removal & replace. Scheduled removal | 2.9040 | 1.14 | 1.7 | 0.67 | - | - |
| Windshield wipers and anti-icing | 0508 | On aircraft repair | 0.2420 | 0.33 | 1 | 0.33 | | |
| | | Unscheduled removal & replace. Scheduled removal | 2.4200 | 0.81 | 1.3 | 0.62 | - | - |
| Maintenance actions | 0509 | On aircraft repair | 48.6423 | 0.65 | 1 | 0.65 | | |
| | | Unscheduled removal & replace. Scheduled removal | 1.6940 | 0.72 | 2 | 0.36 | - | - |

| TABLE LI. CH-47C INPUT DATA - LANDING GEAR SYSTEM | | | | | | | | | |
|---|------|--|-----------------------|-------------------|---------------|-------------------|------------------------|-----------|--|
| Subsystem Name | WUC | Task Type | Fail Rate 100C hr | MTH/ Task | Crew Size | EMT | Mission Affecting Rate | MORS Rate | |
| Fitting and braces | 0601 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.6620 0.7260 - | 0.36 0.11 - | 1 1 - | 0.36 0.21 - | - | - | |
| Power steering | 0602 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 - - | 0.33 - - | 2 - - | 0.16 - - | - | - | |
| Shock struts | 0603 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 0.7420 - | 0.33 2.30 - | 2 1.9 - | 0.17 1.21 - | - | - | |
| Swivel lock system | 0604 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.9360 3.3880 - | 1.56 2.84 - | 1 1.2 - | 1.56 2.37 - | - | - | |
| Wheel assemblies | 0605 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 4.3560 - | 0.14 2.84 - | 1 1.5 - | 0.14 1.89 - | - | - | |
| Wheels and parking brake system | 0606 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.2100 4.114 - | 1.13 4.10 - | 1 1.5 - | 1.13 0.73 - | - | - | |
| Maintenance actions | 0607 | On aircraft repair Unsched. removal & replace. Scheduled removal | 24.2002 - - | 0.31 - - | 1 - - | 0.31 - - | - | - | |

TABLE L11. CH-47C INPUT DATA - FLIGHT CONTROL SYSTEM

| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMU/ Task | Crew Size | EMT | Mission | |
|-------------------------------------|------|--|----------------------|--------------|--------------|------|-------------------|--------------|
| | | | | | | | Affecting Rate | NORS Rate |
| Dunges and dampers | 0701 | On aircraft repair | 0.2420 | 1.04 | 1.3 | 0.80 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Cockpit controls | 0702 | On aircraft repair | 0.4840 | 1.00 | 1 | 1.00 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| First stage mixing | 0703 | On aircraft repair | 0.2420 | 0.75 | 1 | 0.75 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Hydraulic boost | 0704 | On aircraft repair | 4.5981 | 0.75 | 2 | 0.37 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Magnetic brake and centering spring | 0705 | On aircraft repair | 0.4840 | 0.59 | 2 | 0.29 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Pedals and positioning system | 0706 | On aircraft repair | - | - | - | - | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Miscellaneous SAS equipment | 0707 | On aircraft repair | 1.4520 | 7.92 | 1 | 7.92 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Second stage mixing | 0708 | On aircraft repair | 1.4520 | 6.02 | 1 | 6.02 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Transfer cables | 0709 | On aircraft repair | 0.2420 | 2.25 | 1 | 2.25 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Trim and stick position | 0710 | On aircraft repair | 0.9680 | 1.00 | 1 | 1.00 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| Maintenance actions | 0711 | On aircraft repair | 236.1938 | 0.37 | 2 | 0.19 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| SAS #1 | 0712 | On aircraft repair | 0.2420 | 0.08 | 1 | 0.08 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |
| SAS #1 Maintenance action | 0713 | On aircraft repair | 5.5660 | 1.16 | 2 | 0.58 | - | - |
| | | Unsched. removal & replace. Scheduled removal | | | | | | |

| TABLE LII. Continued | | | | | | | | | |
|---------------------------------|------|--|-----------------------|-------------------|-------------|-------------------|------------------------|-------------|--|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MWH/ Task | Crew Size | EMT | Mission Affecting Rate | MORS Rate | |
| SAS #2 | 0714 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 - - | 6.75 - - | 1 - - | 6.75 - - | - - - | - - - | |
| SAS #2 Maintenance action | 0715 | On aircraft repair Unsched. removal & replace. Scheduled removal | 4.5980 0.2420 - | 0.92 2.00 - | 2 2 - | 0.46 1.00 - | - - - | - - - | |

| TABLE LIII. CH-47C INPUT DATA - HYDRAULIC SYSTEM | | | | | | | | | |
|--|------|-----------------------------|-------------------|-----------|-----------|------|------------------------|-----------|--|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate | |
| Utility | 0801 | On aircraft repair | 3.8721 | 0.87 | 1 | 0.87 | | | |
| | | Unsched. removal & replace. | 29.7662 | 1.04 | 1.6 | 0.65 | .7260 | - | |
| | | Scheduled removal | - | - | - | - | - | - | |
| Maintenance Actions | 0802 | On aircraft repair | 45.7383 | 0.51 | 2 | 0.25 | | | |
| | | Unsched. removal & replace. | 0.2420 | 1.00 | 2 | 0.50 | - | - | |
| | | Scheduled removal | - | - | - | - | - | - | |

TABLE LIV. CH-47C INPUT DATA - ROTOR SYSTEM

| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate |
|---|------|--|-----------------------------|----------------------|-----------------|----------------------|------------------------------|--------------|
| Blades | 0901 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.6941 1.6941 0.7261 | 0.80 0.46 0.83 | 2 1.6 1.6 | 0.40 0.29 0.52 | 2.6620 | - |
| Controls | 0902 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.4520 10.8901 0.2420 | 0.97 2.35 3.20 | 1 1.6 1.6 | 0.97 1.47 2.00 | .9680 | .2420 |
| Damper | 0903 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.1780 20.5702 - | 0.65 3.36 - | 1 1.6 - | 0.65 2.10 - | .4840 | - |
| Hub assembly | 0904 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.4200 10.4061 1.2100 | 1.54 1.14 4.05 | 1 1.7 1.7 | 1.54 0.67 2.38 | .4840 | .2420 |
| Rainshield and boots | 0905 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.1780 7.7441 - | 0.58 1.87 - | 1 1.8 - | 0.29 1.04 - | - | - |
| Maintenance actions | 0906 | On aircraft repair Unsched. removal & replace. Scheduled removal | 116.6448 1.2101 - | 1.09 2.06 - | 2 2 - | 0.55 1.03 - | - | - |
| Blade, forward 114R1502-25 | 0907 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.6940 8.2280 3.3880 | 0.73 2.22 2.02 | 2 1.6 1.6 | 0.37 1.39 1.26 | - | - |
| Blade, forward Maintenance actions | 0908 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 0.4840 - | 2.67 0.94 - | 2 1.6 - | 1.34 0.59 - | - | - |
| Blade, aft 114R1502-26 | 0909 | On aircraft repair Unsched. removal & replace. Scheduled removal | 3.3880 3.6300 4.3560 | 0.50 1.97 2.13 | 2 1.6 1.6 | 0.25 1.23 1.33 | - | - |
| Blade, forward 114R1502-25 Maintenance action | 0910 | On aircraft repair Unsched. removal & replace. Scheduled removal | 42.5923 4.1140 - | 1.09 1.63 - | 2 2 - | 0.55 0.82 - | - | - |
| Blade, forward 114R1502-33 Maintenance action | 0911 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.4200 0.4840 - | 0.68 1.75 - | 2 2 - | 0.34 0.88 - | - | - |
| Blade, aft 114R1502-26 Maintenance action | 0912 | On aircraft repair Unsched. removal & replace. Scheduled removal | 27.3463 2.1780 - | 1.16 1.09 - | 2 2 - | 0.58 0.55 - | - | - |
| Blade, aft 114R1502-34 Maintenance action | 0913 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 - - | 1.34 - - | 2 - - | 0.67 - - | - | - |

TABLE LIV. Continued

| Subsystem Name | MUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate |
|---|------|--|----------------------|----------------|--------------|--------------|------------------------------|--------------|
| Controllable swashplate (aft) 114R3505-12 | 0914 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.4840 | 4.60 | 1 | 4.60 | - | - |
| Controllable swashplate (forward) | 0915 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.9680 | 8.34 | 1 | 8.34 | - | - |
| Controllable swashplate (aft), maintenance action | 0916 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.1210 | 0.08 | 1 | 0.08 | - | - |
| Swashplate (aft) 114R3505-12 | 0917 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.1210 | 0.08 | 1 | 0.08 | - | - |
| Rotary wing (assembly) forward | 0918 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.9680 0.9680 | 13.51 10.25 | 2 2 | 6.75 5.13 | - | - |
| Rotary wing assembly, maintenance action | 0919 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.1210 | 0.50 | 1 | 0.50 | - | - |
| Rotary wing assembly, maintenance action | 0920 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 | 0.50 | 1 | 0.50 | - | - |
| Rotary wing assembly, aft | 0921 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 0.2420 | 3.83 9.00 | 2 2 | 1.92 4.50 | - | - |
| Rotary wing assembly, aft | 0922 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 | 2.00 | 1 | 2.00 | - | - |
| Rotary wing assembly, aft | 0923 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 | 2.00 | 1 | 2.00 | - | - |

| TABLE LV. CH-47C INPUT DATA - INDICATING SYSTEM | | | | | | | | | |
|---|------|--|----------------------------|----------------------|--------------|----------------------|------------------------------|--------------|---|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate | |
| | | | | | | | | | |
| APU indicator | 1001 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | - | - | - | - | - | - | - |
| Chip detector | 1002 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 3.8721 3.3880 | 0.45 1.55 | 1 | 0.45 1.55 | - | - | - |
| Basic flight instruments | 1003 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.4520 4.1140 | 0.27 0.74 | 1 | 0.27 0.74 | - | .2420 | - |
| Drive system lubrication | 1004 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9681 5.8080 | 0.97 0.88 | 1 | 0.97 0.63 | - | - | - |
| Engine fire detection | 1005 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.4522 17.9081 | 1.09 1.59 | 1 | 1.09 1.3 | 1.22 | .2420 | - |
| Hydraulic pressure | 1006 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 0.2420 | 0.20 0.93 | 2 | 0.10 0.58 | - | - | - |
| Master caution indicating | 1007 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.2420 0.9680 | 1.00 0.80 | 1 | 1.00 0.50 | - | - | - |
| Powerplant fuel | 1008 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.2100 2.6620 | 1.67 0.91 | 3 | 0.56 0.30 | - | - | - |
| Powerplant lubrication | 1009 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 0.9681 6.5340 | 1.02 1.20 | 1 | 1.02 0.92 | - | - | - |
| Powerplant performance | 1010 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.4520 8.9541 0.7260 | 1.77 1.08 1.62 | 1 | 1.77 0.77 1.16 | .7260 | .2420 | - |
| Rotor tachometer | 1011 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 1.6940 10.6481 | 0.83 0.74 | 1 | 0.83 0.49 | - | - | - |
| Maintenance actions | 1012 | On aircraft repair Unscheduled. removal & replace. Scheduled removal | 57.8384 0.7260 | 0.49 0.33 | 2 | 0.25 0.16 | - | - | - |

| TABLE XVI. CH-47C INPUT DATA - POWERPLANT SYSTEM | | | | | | | | | |
|--|------|--|----------------------|--------------|--------------|------|------------------------------|--------------|--|
| Subsystem Name | WUC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMF | Mission Affecting Rate | NORS Rate | |
| Anti-icing and de-icing | 1101 | On aircraft repair | 7.7440 | 0.61 | 1 | 0.61 | | | |
| | | Unsched. removal & replace. Scheduled removal | 9.4381 | 1.70 | 1.3 | 1.31 | | | |
| Installation Basic engine | 1102 | On aircraft repair | 2.1780 | 1.19 | 1 | 1.19 | | | |
| | | Unsched. removal & replace. Scheduled removal | 10.8901 | 1.74 | 1.5 | 1.16 | 9.9221 | .4840 | |
| Controls | 1103 | On aircraft repair | 7.3880 | 0.81 | 1 | 0.81 | | | |
| | | Unsched. removal & replace. Scheduled removal | 30.6063 | 1.17 | 1.5 | 0.78 | 1.2100 | .4840 | |
| Cooling and nacelles | 1104 | On aircraft repair | 84.9427 | 1.02 | 1 | 1.02 | | | |
| | | Unsched. removal & replace. Scheduled removal | 54.2084 | 1.03 | 1.8 | 0.57 | | | |
| Exhaust | 1105 | On aircraft repair | 8.2281 | 0.74 | 1 | 0.74 | | | |
| | | Unsched. removal & replace. Scheduled removal | 5.5660 | 1.32 | 1.4 | 0.94 | | | |
| Fire extinguishing | 1106 | On aircraft repair | - | - | - | - | | | |
| | | Unsched. removal & replace. Scheduled removal | 1.4520 | 0.46 | 1.3 | 0.35 | | | |
| Fuel | 1107 | On aircraft repair | 10.8901 | 0.87 | 1 | 0.87 | | | |
| | | Unsched. removal & replace. Scheduled removal | 31.2182 | 2.56 | 1.3 | 1.97 | 2.9040 | | |
| Ignition | 1108 | On aircraft repair | 0.7260 | 0.19 | 1 | 0.19 | | | |
| | | Unsched. removal & replace. Scheduled removal | 3.8720 | 0.61 | 1.9 | 0.32 | .2420 | | |
| Lubrication | 1109 | On aircraft repair | 2.1780 | 0.62 | 1 | 0.62 | | | |
| | | Unsched. removal & replace. Scheduled removal | 9.9221 | 1.79 | 1.3 | 1.38 | 2.9040 | | |
| Mounts and support | 1110 | On aircraft repair | 6.5341 | 1.29 | 1 | 1.29 | | | |
| | | Unsched. removal & replace. Scheduled removal | 28.0722 | 1.39 | 1.4 | 0.99 | 1.4520 | | |
| Starting | 1111 | On aircraft repair | 0.4840 | 0.67 | 1 | 0.67 | | | |
| | | Unsched. removal & replace. Scheduled removal | 2.9040 | 0.98 | 1.4 | 0.70 | .4840 | | |
| Maintenance action | 1112 | On aircraft repair | 293.3062 | 1.22 | 2 | 0.61 | | | |
| | | Unsched. removal & replace. Scheduled removal | 20.5702 | 1.63 | 2 | 0.82 | | | |
| LH engine | 1113 | On aircraft repair | 1.2100 | 3.90 | 1 | 3.90 | | | |
| | | Unsched. removal & replace. Scheduled removal | 4.8400 | 13.68 | 1.5 | 9.12 | | | |

| TABLE LVI. Continued | | | | | | | | | |
|-------------------------------|------|--|------------------------|--------------------|---------------|-------------------|------------------------|-----------|--|
| Subsystem Name | WDC | Task Type | Fail Rate 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate | NORS Rate | |
| LH engine maintenance action | 1114 | On aircraft repair Unsched. removal & replace. Scheduled removal | 10.1641 0.9680 - | 0.98 1.98 - | 2 2 - | 0.49 1.99 - | - - - | - | |
| RH engine | 1115 | On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2420 6.2920 - | 1.75 13.14 - | 1 1.5 - | 3.75 8.89 - | - - - | - | |
| RH engine maintenance action | 1116 | On aircraft repair Unsched. removal & replace. Scheduled removal | 12.0681 0.2420 - | 0.97 14.92 - | 2 2 - | 0.49 7.46 - | - - - | - | |
| RH engine maintenance actions | 1117 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.0000 - - | 0.97 - - | 2 - - | 0.49 - - | - - - | - | |

APPENDIX V
HLH R&M INPUT DATA BASE

Tables LVII through LV have been employed in the development of the HLH R&M simulation model functions tables.

Included in this appendix are the various inspection and servicing tasks against the rotor, flight controls, drive, and cargo handling systems. These items are not malfunctions. As such the total malfunction rate used for the HLH simulation is approximately 1.05 occurrences per flight hour.

| TABLE LVII. HLH INPUT DATA - NON-ATC SYSTEM | | | | | | |
|---|-----|---|----------------------|----------|-----------|---------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/1000 hrs |
| Fuselage | 90* | 0101 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 314.0 | 1.0 | 2 | 0.5 |
| | 10* | 0102 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 35.0 | 39.0 | 5 | 7.8 |
| Nacelles | 90* | 0201 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 23.4 | 1.0 | 2 | 0.5 |
| | 10* | 0202 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 2.6 | 20.0 | 5 | 4.0 |
| Landing gear | 90* | 0301 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 61.2 | 1.0 | 2 | 0.5 |
| | 10* | 0302 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 6.8 | 26.0 | 5 | 5.2 |
| Powerplant | 90 | 0401 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 40.5 | 1.0 | 2 | 0.5 |
| | 10* | 0402 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 4.5 | 58.0 | 5 | 11.6 |
| Powerplant controls | 90* | 0501 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 53.1 | 1.0 | 2 | 0.5 |
| | 10* | 0502 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 5.9 | 18.0 | 4 | 4.5 |
| Fuel | 90* | 0601 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 19.8 | 1.0 | 2 | 0.5 |
| | 10* | 0602 On aircraft repair Unscheduled, removal & replace. Scheduled removal | 2.2 | 48.0 | 6 | 8.0 |

| TABLE LVII. Continued | | | | | | | |
|------------------------|-----|---|----------------------|----------|-----------|-----|---------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MWH/Task | Crew Size | EMT | Mission Affecting Rate/1000 hrs |
| APU | 900 | 0701 On aircraft repair Unsched. removal & replace. Scheduled removal | 4.5 | 1.0 | 2 | 0.5 | 0.636 |
| | 100 | 0702 On aircraft repair Unsched. removal & replace. Scheduled removal | 0.5 | 45.0 | 5 | 9.0 | - |
| Communications | 900 | 0801 On aircraft repair Unsched. removal & replace. Scheduled removal | 14.4 | 1.0 | 2 | 0.5 | 0.002 |
| | 100 | 0802 On aircraft repair Unsched. removal & replace. Scheduled removal | 1.6 | 10.8 | 3 | 3.6 | - |
| Navigational/ guidance | 900 | 0901 On aircraft repair Unsched. removal & replace. Scheduled removal | 36.9 | 0.4 | 1 | 0.4 | 0.000 |
| | 100 | 0902 On aircraft repair Unsched. removal & replace. Scheduled removal | 4.1 | 0.4 | 1 | 0.4 | - |
| Instruments | 900 | 1001 On aircraft repair Unsched. removal & replace. Scheduled removal | 65.7 | 1.0 | 2 | 0.5 | 0.184 |
| | 100 | 1002 On aircraft repair Unsched. removal & replace. Scheduled removal | 7.3 | 15.0 | 3 | 5.0 | - |
| Auxiliary Elect | 900 | 1101 On aircraft repair Unsched. removal & replace. Scheduled removal | 5.4 | 0.3 | 1 | 0.3 | 0.000 |
| | 100 | 1102 On aircraft repair Unsched. removal & replace. Scheduled removal | 0.6 | 0.3 | 1 | 0.3 | -- |
| AIDAPS | 900 | 1201 On aircraft repair Unsched. removal & replace. Scheduled removal | 1.8 | 1.0 | 2 | 0.5 | 0.000 |
| | 100 | 1202 On aircraft repair Unsched. removal & replace. Scheduled removal | 0.2 | 26.0 | 5 | 5.2 | - |

TABLE LVII. Continued

| Subsystem Name | MUC | Task Type | Failure Rate/ 1000 hr | MMH/ Task | Crew Size | EMT | Mission Affecting Rate/ 1000 hrs |
|--------------------------------|------|--|--------------------------|--------------|-----------|-----|-------------------------------------|
| Pneumatic power | 1301 | On aircraft repair Unsched. removal & replace. Scheduled removal | 22.5 | 1.0 | 2 | 0.5 | 0.001 |
| | 1302 | On aircraft repair Unsched. removal & replace. Scheduled removal | 2.5 | 20.0 | 5 | 4.0 | - |
| Hydraulic power (utility) | 1401 | On aircraft repair Unsched. removal & replace. Scheduled removal | 31.5 | 1.0 | 2 | 0.5 | 0.573 |
| | 1402 | On aircraft repair Unsched. removal & replace. Scheduled removal | 3.5 | 16.4 | 4 | 4.1 | - |
| Electrical power | 1501 | On aircraft repair Unsched. removal & replace. Scheduled removal | 32.4 | 1.0 | 2 | 0.5 | 0.144 |
| | 1502 | On aircraft repair Unsched. removal & replace. Scheduled removal | 3.6 | 16.0 | 4 | 4.0 | - |
| Accommodations/ furnishings | 1601 | On aircraft repair Unsched. removal & replace. Scheduled removal | 17.1 | 1.0 | 2 | 0.5 | 0.000 |
| | 1602 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.9 | 33.0 | 5 | 6.6 | - |
| Environmental/ control | 1701 | On aircraft repair Unsched. removal & replace. Scheduled removal | 12.6 | 1.0 | 2 | 0.5 | 0.020 |
| | 1702 | On aircraft repair Unsched. removal & replace. Scheduled removal | 1.4 | 51.0 | 6 | 8.5 | - |
| Flight controls | 1801 | On aircraft repair Unsched. removal & replace. Scheduled removal | 67.4 | 1.0 | 2 | 0.5 | 0.190 |
| | 1802 | On aircraft repair Unsched. removal & replace. Scheduled removal | 7.5 | 37.0 | 5 | 7.4 | - |

| TABLE LVIII. HLR INPUT DATA - ROTOR SYSTEM | | | | | | |
|--|------|-----------------------------|----------------------|----------|-----------|---------------------------------|
| Subsystem Name | MUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/1000 hrs |
| Hub and upper controls (fault isolation) | 1901 | On aircraft repair | 5.333 | 0.5000 | 1 | 0.5 |
| Forward rotor blades (inspection) | 1902 | On aircraft repair | 100.0 | 0.0904 | 2 | 0.5148 |
| Forward rotor blades (inspection) | 1903 | On aircraft repair | 3.3 | 2.6754 | 2 | 2.2737 |
| Rotor blade (troubleshoot failure detection system) | 1904 | Unsched. removal & replace. | 0.2742 | 1.4040 | 1 | 1.4040 |
| Forward rotor blades (removal and replacement) | 1905 | Unsched. removal & replace. | 1.3946 | 5.7720 | 5 | 2.1645 |
| Forward rotor blades (track) | 1906 | On aircraft repair | 3.1982 | 1.5015 | 3 | 1.4235 |
| Forward and aft rotor blades (check track) | 1907 | On aircraft repair | 31.4754 | 0.2730 | 2 | 0.3705 |
| Forward rotor blades (removal and replacement tiedown fitting) | 1908 | Unsched. removal & replace. | 0.0053 | 0.8970 | 3 | 0.7995 |
| Aft rotor blades (inspection) | 1909 | On aircraft repair | 100.0 | 3.3384 | 3 | 1.2948 |
| Aft rotor blades (inspection) | 1910 | On aircraft repair | 3.3 | 5.2260 | 2 | 2.6910 |
| Aft rotor blades (track) | 1911 | On aircraft repair | 3.1982 | 1.7745 | 3 | 1.6965 |
| Aft rotor blades (removal and replacement tiedown fittings) | 1912 | Unsched. removal & replace. | 0.0053 | 1.7940 | 3 | 1.4235 |

TABLE LVIII. Continued

| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | EMT | Mission Affecting Rate/1000 hrs |
|---|------|---------------------------------|----------------------|----------|-----------|---------|---------------------------------|
| Aft rotor blade (removal & replacement) | 1913 | Unscheduled, removal & replace. | 1.3946 | 6.4545 | 5 | 2.4570 | 0.3265 |
| Hub assembly (inspection) | 1914 | On aircraft repair | 3.333 | 0.8970 | 1 | 0.8970 | - |
| Hub assembly (removal & replacement) | 1915 | Unscheduled, removal & replace. | 0.4477 | 20.0655 | 5 | 11.0292 | 0.3713 |
| Hub assembly (rem & repl pitch housing/cross beam assembly) | 1916 | Unscheduled, removal & replace. | 10.731 | 6.5130 | 4 | 2.6715 | - |
| Hub assembly (replace bearing elastomeric) | 1917 | Unscheduled, removal & replace. | 5.319 | 1.7355 | 3 | 0.9165 | - |
| Hub assembly (rem & repl centrifugal stop assembly) | 1918 | Unscheduled, removal & replace. | 0.0387 | 0.9360 | 3 | 0.5655 | - |
| Hub assembly (replacement shear bearing) | 1919 | Unscheduled, removal & replace. | 2.236 | 1.4040 | 3 | 0.8190 | - |
| Hub assembly (rem & repl pitch housing assembly) | 1920 | Unscheduled, removal & replace. | 0.4183 | 0.9360 | 3 | 0.5655 | - |
| Hub assembly (replace cross beam) | 1921 | Unscheduled, removal & replace. | 0.0362 | 1.8720 | 3 | 1.0530 | - |
| Hub assembly (service damper assembly) | 1922 | On aircraft repair | 3.2 | 0.8970 | 2 | 0.4875 | - |
| Hub assembly (inspection of damper assembly) | 1923 | On aircraft repair | 3.333 | 0.0780 | 1 | 0.0780 | - |
| Hub assembly (rem & repl. damper assembly) | 1924 | Unscheduled, removal & replace. | 7.0 | 2.1645 | 3 | 1.0725 | 0.1168 |
| Hub assembly (repair, repl. bearing) | 1925 | On aircraft repair | 0.9018 | 0.9945 | 3 | 0.6240 | - |

| TABLE LVIII. Continued | | | | | | |
|--|------|-----------------------------|----------------------|----------|-----------|-------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/ |
| Hub assembly (repl. outboard bearing) | 1926 | Unsched. removal & replace. | .9018 | 2.0670 | 4 | 1.1310 |
| Hub & upper controls (inspection) | 1927 | On aircraft repair | 100.0 | 0.8424 | 1 | 0.8424 |
| Upper controls (inspection) | 1928 | On aircraft repair | 3.333 | 0.6942 | 2 | 0.6942 |
| Upper controls (removal & repl. pitch link) | 1929 | Unsched. removal & replace. | 3.6072 | 1.2480 | 3 | 0.7995 |
| Upper controls pitch link (replace bearings) | 1930 | Unsched. removal & replace. | 7.2144 | 0.2457 | 2 | 0.2457 |
| Upper controls (grease swash-plate bearings) | 1931 | Unsched. removal & replace. | 3.333 | 1.9110 | 2 | 1.1505 |
| Upper controls (removal & repl. swashplate assembly) | 1932 | Unsched. removal & replace. | 1.6328 | 24.5115 | 5 | 12.0042 |
| Upper controls (repl. bearing condition sensor) | 1933 | Unsched. removal & replace. | | 0.4290 | 1 | 0.4290 |
| Upper controls (removal & replace. scissors arm) | 1934 | Unsched. removal & replace. | 0.0750 | 6.5325 | 3 | 3.9195 |

TABLE LIX. HLM INPUT DATA - CARGO HANDLING SYSTEM

| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Lat | Mission Affecting Rate/1000 hrs |
|--|------|-----------------------------|----------------------|----------|-----------|--------|---------------------------------|
| Cargo handling (inspect) | 2001 | On aircraft repair | 100.0 | 0.4797 | 1 | 0.4797 | - |
| Cargo handling (inspect) | 2002 | On aircraft repair | 3.3 | 0.9906 | 1 | 0.9906 | - |
| Hoist drive assembly (service-oil) | 2003 | On aircraft repair | 5.584 | 0.2535 | 1 | 0.2535 | - |
| Hoist drive assembly (removal and replacement) | 2004 | Unsched. removal & replace. | 1.9570 | 1.1895 | 2 | 0.9555 | 0.1370 |
| Brake assembly (removal and replacement) | 2005 | Unsched. removal & replace. | 0.1390 | 1.8330 | 2 | 1.5210 | - |
| Control valve unit (R&R modified valve) | 2006 | Unsched. removal & replace. | 0.7500 | 0.5460 | 1 | 0.5460 | - |
| Control valve unit (R&R shutoff valve) | 2007 | Unsched. removal & replace. | 0.4000 | 0.5460 | 1 | 0.5460 | - |
| Tach generator (removal and replacement) | 2008 | Unsched. removal & replace. | 0.1650 | 0.7800 | 1 | 0.7800 | - |
| Winch assembly (clean) | 2009 | On aircraft repair | 20.0 | 0.4875 | 1 | 0.4875 | - |
| Winch assembly (removal and replacement) | 2010 | Unsched. removal & replace. | 0.670 | 2.1840 | 2 | 1.170 | - |
| Winch assembly (tear down/build up quick change package) | 2011 | On aircraft repair | 0.798 | 4.6800 | 3 | 2.5155 | - |
| Winch assembly (service bevel gearboxes) | 2012 | On aircraft repair | 4.8 | 0.5070 | 1 | 0.5070 | - |
| Winch assembly (service-grease ball spline) | 2013 | On aircraft repair | 1.1 | 0.7605 | 1 | 0.7605 | - |

TABLE LIX. Continued

| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | EHT | Mission Affecting Rate/1000 hrs |
|--|------|-----------------------------|----------------------|----------|-----------|--------|---------------------------------|
| Winch assembly (remove, inspect chip detector) | 2014 | On aircraft repair | 1.280 | 0.4680 | 1 | 0.4680 | - |
| Winch assembly (R&R drum traversing wheels) | 2015 | Unsched. removal & replace. | 0.1000 | 1.0530 | 1 | 1.0530 | - |
| Winch assembly (repl bevel gear-box oil seals) | 2016 | Unsched. removal & replace. | 0.4400 | 5.8695 | 3 | 3.1395 | - |
| Winch assembly (repl side load beam wear strips) | 2017 | Unsched. removal & replace. | 0.450 | 2.3010 | 2 | 1.8330 | - |
| Cable cutter assembly (rem & repl cable cutter) | 2018 | Unsched. removal & replace. | 0.278 | 1.9110 | 3 | 1.0140 | - |
| Cable cutter assembly (sched repl of cartridge/ignitors) | 2019 | Scheduled removal | 0.278 | 0.7488 | 2 | 0.5070 | - |
| Tension member (rem & repl tension members) | 2020 | Unsched. removal & replace. | 0.00 | 1.9500 | 2 | 1.1700 | 0.023 |
| Signal reel assembly (rem & repl signal reel assembly) | 2021 | Unsched. removal & replace. | 0.3613 | 1.0725 | 2 | 0.6435 | 0.010 |
| Signal reel assembly (replace signal conductor) | 2022 | Unsched. removal & replace. | 0.150 | 1.2090 | 1 | 1.2090 | - |
| Signal reel assembly (repl ribbon tape cartridge) | 2023 | Unsched. removal & replace. | 0.050 | 1.0725 | 1 | 1.0725 | - |
| Signal reel assembly (rem & repl pneumatic valve) | 2024 | Unsched. removal & replace. | 0.3360 | 0.5070 | 1 | 0.5070 | - |
| Coupling assembly (clean) | 2025 | On aircraft repair | 50.0 | 0.4680 | 1 | 0.4680 | - |
| Coupling assembly (rem & repl coupling assembly) | 2026 | Unsched. removal & replace. | 0.9100 | 0.3510 | 2 | 0.2925 | 0.024 |

| TABLE 1-2. Continued | | | | | | |
|--|------|-----------------------------|----------------------|----------|-----------|--------------------------------|
| Subsystem Name | MUC | Task Type | Failure Rate/1000 hr | MHI Task | Crew Size | Mission Affecting Rate/1000 hr |
| Coupling assembly (rem & repl solenoid assembly) | 2027 | Unsched. removal & replace. | 0.128 | 1.4004 | 1 | 1.4040 |
| Coupling assembly (repl & adjust switch(es)) | 2028 | Unsched. removal & replace. | 0.528 | 1.3065 | 1 | 1.3065 |
| Control panel (removal and replacement) | 2029 | Unsched. removal & replace. | 0.50 | 0.2535 | 1 | 0.2535 |
| Control panel (repair - replace switch) | 2030 | Unsched. removal & replace. | 0.50 | 0.2340 | 1 | 0.2340 |
| Indicators (rem & repl an indicator) | 2031 | Unsched. removal & replace. | 2.5 | 0.2535 | 1 | 0.2535 |
| Hoist control grip (replace faulty switch) | 2032 | Unsched. removal & replace. | 1.0 | 0.4290 | 1 | 0.4290 |
| Support & span positioning (rem & repl cable/pulley) | 2033 | Unsched. removal & replace. | 0.008 | 0.6825 | 1 | 0.6825 |
| Support & span positioning (rem & repl articulated pneu duct) | 2034 | Unsched. removal & replace. | 0.825 | 0.7605 | 1 | 0.7605 |
| Support & span positioning sys (repair, repl hinged track section) | 2035 | On aircraft repair | 0.005 | 1.3065 | 2 | 0.8385 |
| Actuator/gearbox (removal and replacement) | 2036 | Unsched. removal & replace. | 0.058 | 0.7410 | 1 | 0.7410 |
| Position lock actuator (removal & replacement) | 2037 | Unsched. removal & replace. | 0.0172 | 0.7410 | 2 | 0.7020 |
| Load isolator (recharge nitrogen chamber) | 2038 | On aircraft repair | 7.2 | 0.4485 | 1 | 0.4485 |
| Load isolator (removal and replacement) | 2039 | Unsched. removal & replace. | 2.000 | 1.1700 | 3 | 0.8190 |

| TABLE LIX. Continued | | | | | | |
|---|------|-----------------------------|----------------------|----------|-----------|--------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/1000 hr |
| Visual augmentation system (inspect) | 2040 | On aircraft repair | 100.0 | 0.0195 | 1 | 0.0195 |
| Camera & lens assembly (clean lens cover) | 2041 | On aircraft repair | 80.0 | 0.1560 | 1 | 0.1560 |
| Camera & lens assembly (repl VAS camera unit) | 2042 | Unsched. removal & replace. | 0.001 | 1.0335 | 3 | 0.8970 |
| Camera lens assembly (repl lens assembly) | 2043 | Unsched. removal & replace. | 0.001 | 2.0475 | 3 | 1.6575 |
| VAS display unit (removal and replacement) | 2044 | Unsched. removal & replace. | 0.001 | 0.3510 | 1 | 0.3510 |

| TABLE LX. HLH INPUT DATA - DRIVE SYSTEM | | | | | | |
|--|------|---------------------------------|----------------------|----------|-----------|--------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/1000 hr |
| Aft transmission (clean main indicating screen) | 2101 | On aircraft repair | 0.122 | 0.5070 | 1 | 0.5070 |
| Aft transmission (clean secondary indicating screen) | 2102 | On aircraft repair | 0.128 | 0.5070 | 1 | 0.5070 |
| Chip detector (examine and clean) | 2103 | On aircraft repair | 0.66 | 0.5265 | 1 | 0.5265 |
| Aft transmission (inspection) | 2104 | On aircraft repair | 100.0 | 0.1170 | 1 | 0.1170 |
| Aft transmission (inspection) | 2105 | On aircraft repair | 3.3 | 0.1950 | 1 | 0.1950 |
| Aft transmission (remove, build-up, replace) | 2106 | Unscheduled. removal & replace. | 0.472 | 38.9961 | 5 | 29.4762 |
| Aft transmission (rem & repl temp probe) | 2107 | Unscheduled. removal & replace. | 0.378 | 0.1560 | 2 | 0.1170 |
| Press transducer (probe) primary (rem & repl) | 2108 | Unscheduled. removal & replace. | 0.357 | 0.4485 | 1 | 0.4485 |
| Oil cooler (removal and replacement) | 2109 | Unscheduled. removal & replace. | 0.632 | 5.0115 | 3 | 3.3735 |
| Blower (oil cooler) (rem & repl) | 2110 | Unscheduled. removal & replace. | 0.196 | 2.3790 | 3 | 1.5600 |
| Aux lube pump (removal and replacement) | 2111 | Unscheduled. removal & replace. | 0.011 | 0.5265 | 1 | 0.5265 |
| Main lube pump (removal and replacement) | 2112 | Unscheduled. removal & replace. | 0.035 | 0.8385 | 1 | 0.8385 |
| Main lube pump (rem & repl pump filter) | 2113 | Unscheduled. removal & replace. | 0.164 | 0.6435 | 1 | 0.6435 |

TABLE LX. Continued

| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MHR/Task | Crew Size | EMT | Mission Affecting Rate/1000 hr |
|--|------|-----------------------------|----------------------|----------|-----------|---------|--------------------------------|
| Aft xman accessory assembly (replace accessory seals) | 2114 | Unashed. removal & replace. | 2.877 | 2.6520 | 2 | 2.1450 | - |
| Combining xman (clean indicating screen (primary)) | 2115 | On aircraft repair | 0.66 | 0.5070 | 1 | 0.5070 | - |
| Combining xman (clean indicating screen secondary) | 2116 | On aircraft repair | 0.66 | 0.5070 | 1 | 0.5070 | - |
| Combining xman (inspection) | 2117 | On aircraft repair | 100.0 | 0.1170 | 1 | 0.1170 | - |
| Combining xman (inspection) | 2118 | On aircraft repair | 3.3 | 0.6630 | 1 | 0.6630 | - |
| Combining xman (rem build-up and replace out the top) | 2119 | Unashed. removal & replace. | 0.342 | 20.0460 | 4 | 9.7110 | 0.385 |
| Combining xman (rem build-up and replace out the back) | 2120 | Unashed. removal & replace. | 0.342 | 28.3140 | 3 | 15.1320 | - |
| Combining xman (rem build-up and replace thru floor) | 2121 | Unashed. removal & replace. | 0.342 | 16.3800 | 3 | 9.2430 | - |
| Combining xman (rem & repl temp probe) | 2122 | Unashed. removal & replace. | 0.378 | 0.1560 | 2 | 0.1170 | - |
| Combining xman (rem & repl press reducer-primary) | 2123 | Unashed. removal & replace. | 0.357 | 0.2925 | 1 | 0.2925 | - |
| Combining xman oil cooler (rem & repl) | 2124 | Unashed. removal & replace. | 0.632 | 4.4655 | 3 | 2.6325 | - |
| Combining xman (rem & repl fan-(oil cooled)) | 2125 | Unashed. removal & replace. | 0.196 | 1.5990 | 3 | 1.4040 | - |
| Combining xman (rem & repl clutch assembly) | 2126 | Unashed. removal & replace. | 0.200 | 3.5880 | 3 | 2.1283 | - |

| TABLE LX. Continued | | | | | | |
|--|------|-----------------------------|----------------------|----------|-----------|--------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH/Task | Crew Size | Mission Affecting Rate/1000 hr |
| Combining xman (rem & repl filter element (primary)) | 2127 | Unashed. removal & replace. | 0.115 | 0.5655 | 2 | 0.5265 |
| Combining xman (rem & repl oil pump (primary)) | 2128 | Unashed. removal & replace. | 0.047 | 3.1005 | 3 | 1.7355 |
| Combining xman (rem & repl rotor brake) | 2129 | Unashed. removal & replace. | 1.6760 | 2.6910 | 3 | 1.7940 |
| Combining xman (rem & repl rotor brake disc) | 2130 | Unashed. removal & replace. | 0.068 | 4.3485 | 3 | 2.5333 |
| #1 & #2 shafting & couplings - R/H Engine (inspection) | 2131 | On aircraft repair | 100.0 | 0.1053 | 1 | 0.1053 |
| Engine shafting (inspection) | 2132 | On aircraft repair | 100.0 | 0.2613 | 1 | 0.2613 |
| #3 shaft to LH engine (inspection) | 2133 | On aircraft repair | 100.0 | 0.1560 | 1 | 0.1560 |
| #2 engine shaft assembly replace | 2134 | Unashed. removal & replace. | 0.512 | 2.5896 | 2 | 1.4040 |
| Engine shafting (inspection) | 2135 | On aircraft repair | 3.3 | 0.4134 | 1 | 0.4134 |
| #1 & #2 shafting & coupling - R/H Engine (inspection) | 2136 | On aircraft repair | 3.3 | 0.2262 | 1 | 0.2262 |
| #1 & #2 shafting & coupling - L/H Engine (inspection) | 2137 | On aircraft repair | 3.3 | 0.2262 | 1 | 0.2262 |
| #3 shaft to R/H Engine (inspection) | 2138 | On aircraft repair | 3.3 | 0.1872 | 1 | 0.1872 |
| #3 shaft to L/H Engine (inspection) | 2139 | On aircraft repair | 3.3 | 0.1872 | 1 | 0.1872 |

| TABLE LX. Continued | | | | | | |
|--|------|-----------------------------|-----------------------|----------|-----------|---------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/ 1000 hr | MMH Task | Crew Size | Mission Affecting Rate/ 1000 hr |
| Sync shaft bearings forward xmsn to comb (lube) | 2140 | On aircraft repair | 3.3 | 0.2262 | 1 | 0.2262 |
| Sync shaft bearings comb to aft rotor (lube) | 2141 | On aircraft repair | 3.3 | 0.0468 | 1 | 0.0468 |
| Engine shafting bearings, left, right, center engines (lube) | 2142 | On aircraft repair | 3.3 | 0.1404 | 1 | 0.1404 |
| Sync shafting forward xmsn to comb xmsn (inspection) | 2143 | On aircraft repair | 100.0 | 0.3822 | 1 | 0.3822 |
| Sync shafting comb xmsn to aft rotor xmsn (inspec) | 2144 | On aircraft repair | 100.0 | 0.1248 | 1 | 0.1248 |
| Sync shafting forward xmsn to comb xmsn (inspection) | 2145 | On aircraft repair | 3.3 | 0.7800 | 1 | 0.7800 |
| Sync shafting comb xmsn to aft rotor xmsn (inspec) | 1246 | On aircraft repair | 3.3 | 0.2886 | 1 | 0.2886 |
| Slant shaft No. 11 (rem & repl) | 2147 | Unsched. removal & replace. | 0.1951 | 3.8415 | 3 | 2.0865 |
| Slant shaft No. 10 (rem & repl) | 2148 | Unsched. removal & replace. | 0.1951 | 5.3430 | 3 | 2.8275 |
| Sync shaft bearings (removal and replacement) | 2149 | Unsched. removal & replace. | 0.782 | 2.1283 | 2 | 1.9305 |
| Sync shaft mount (removal and replacement) | 2150 | Unsched. removal & replace. | 2.660 | 0.7020 | 2 | 0.5070 |
| Drive shafting (burnish out nicks, gouges, scratches) | 2151 | On aircraft repair | 4.053 | 0.7800 | 2 | 0.8580 |
| Forward xmsn (clean main indicating screen) | 2152 | On aircraft repair | 0.128 | 0.5070 | 1 | 0.5070 |

| TABLE LX. Continued | | | | | | |
|--|------|-----------------------------|----------------------|----------|-----------|--------------------------------|
| Subsystem Name | WUC | Task Type | Failure Rate/1000 hr | MMH Task | Crew Size | Mission Affecting Rate/1000 hr |
| Forward xmsn (clean secondary indicating screen) | 2153 | On aircraft repair | 0.128 | 0.5070 | 1 | 0.5070 - |
| Chip detector (examine and clean) | 2154 | On aircraft repair | 0.66 | 0.5265 | 1 | 0.5265 - |
| Forward xmsn (inspection) | 2155 | On aircraft repair | 100.0 | 0.1170 | 1 | 0.1170 - |
| Forward xmsn (inspection) | 2156 | On aircraft repair | 3.3 | 0.1950 | 1 | 0.1950 - |
| Forward xmsn (rem build-up, replace) | 2157 | Unsched. removal & replace. | 0.472 | 38.9961 | 5 | 29.4762 0.395 |
| Forward xmsn (rem & repl temp probe) | 2158 | Unsched. removal & replace. | 0.378 | 0.1560 | 2 | 0.1170 - |
| Press transducer (probe) primary (rem & repl) | 2159 | Unsched. removal & replace. | 0.357 | 0.4485 | 1 | 0.4485 - |
| Oil cooler (rem & repl) | 2160 | Unsched. removal & replace. | 0.632 | 5.0115 | 3 | 3.3735 - |
| Blower (oil cooler) (rem & repl) | 2161 | Unsched. removal & replace. | 0.196 | 2.3790 | 3 | 4.5600 - |
| Auxiliary lube pump (rem & repl) | 2162 | Unsched. removal & replace. | 0.011 | 0.5265 | 1 | 0.5265 - |
| Main lube pump (rem & repl) | 2163 | Unsched. removal & replace. | 0.035 | 0.8385 | 1 | 0.8385 - |
| Main lube pump (rem & repl pump filter) | 2164 | Unsched. removal & replace. | 0.164 | 0.6435 | 1 | 0.6435 - |
| Forward xmsn accessory assy (repl accessory seals) | 2165 | Unsched. removal & replace. | 2.877 | 2.6520 | 2 | 2.1450 - |

APPENDIX VI
DOCUMENTATION OF MODIFICATIONS TO
GOVERNMENT-FURNISHED SIMULATION MODEL

The following changes have been made to the Government-furnished simulation model:

1 In modifying the model to accommodate a platoon size of up to 24 aircraft, several reallocations of resources were made. The reallocation of Blocks (BLO) and Fullword Save Values (FSV) should not constrain any future runs or minor model changes.

If it is desired to keep the model core requirements at a minimum, a reallocation of Transactions (XAC) to 400 and Common (COM) to 175,000 will support up to 11 aircraft in most maintenance concepts and mission profiles.

If execution error 599 (limits of core exceeded) is encountered, increase the total core request for the job step by 50,000 bytes.

If execution error 468 or 469 (number of transactions exceeded) is encountered, increase the reallocation of transactions (XAC) by 100, Common (COM) by 50,000, and the total core request for the job step by 50,000 bytes.

2 It is advised that for early applications of the model (debugging) a delimiter be used in column 19 of the simulate card. A value of 6 was used in most analyses, which limited the simulation to 6 CPU minutes.

3 The UNLIST card was added to the original model to suppress model listing.

4 Variable 9 has been generalized with respect to run duration.

5 Variable 10 generalizes the calendar PMP inspection to be a function of input X195 (the calendar inspection interval) rather than a constant in the variable definition.

6 Variable 11 is a modified variable used in the the tests for calendar PMP. It is generalized to be a function of input X195. Parameter 47 (P47) contains the initial time since last calendar PMP for the aircraft. Subsequent to induction of an aircraft into the PMP routine, the P47 value is reset to zero.

| | | |
|---|---|----------|
| ① | 424923 JANE ZP3E9300 | |
| | REALLOCATE 8L3,1350 | 07000100 |
| | REALLOCATE 9T3,90 | 07000200 |
| | REALLOCATE 2J2,70 | 07000300 |
| | REALLOCATE L73,80 | 07000400 |
| | REALLOCATE FJ4,60 | 07000500 |
| | REALLOCATE T49,20 | 07000600 |
| | REALLOCATE 9V4,20 | 07000700 |
| | REALLOCATE V49,250 | 07000800 |
| | REALLOCATE P9V,1600 | 07000900 |
| | REALLOCATE 49V,90 | 07001000 |
| | REALLOCATE C44,60 | 07001100 |
| | REALLOCATE 333,70 | 07001200 |
| | REALLOCATE F49,5 | 07001300 |
| ① | REALLOCATE 449,10 | 07001400 |
| ② | REALLOCATE X40,600 | 07001500 |
| ③ | REALLOCATE C74,250000 | 07001600 |
| | ST4J,ATP | 07001700 |
| | JN,IST | 07001800 |
| 1 | VAR1ABLE 22+45 MISSION MATRIX COLUMN NUMBERS | 07001900 |
| 2 | VAR1ABLE 211+45 MISSION MATRIX NUMBERS | 07002000 |
| 3 | VAR1ABLE 211+45 "MISSION FLYING 4722 33AL" SWITCH NUMBERS | 07002100 |
| 4 | VAR1ABLE 211+41 "MISSION FLYING 4722 33AL" SAVEVALUE NUMBERS | 07002200 |
| 5 | VAR1ABLE 24+45 "AIRCRAFT NOT AVAILABLE WHEN CALLED" MISSION X4 | 07002300 |
| 6 | VAR1ABLE 24+45 "MISSION LAUNCH GATE" SWITCH NUMBERS | 07002400 |
| 7 | VAR1ABLE 211+413 "MISSION CYCLIC FLYING 4722 33AL" SWITCH NUMBERS | 07002500 |
| ④ | VAR1ABLE 24+413 "MISSION CYCLIC FLYING 4722 33AL" SWITCH NUMBERS | 07002600 |
| | 4X(5,1)-42 | 07002700 |
| ⑤ | CHANGES TO TONORRATE CALENDAR INSPECTION/INTERVALS | 07002710 |
| ⑥ | VAR1ABLE (241+1000+241)X195 TOTAL DAYS SINCE PMP | 07002800 |
| | (237+(51/240))X195 DAYS SINCE PMP | 07002900 |
| | 241+1000+241 SIX DIGIT 24V24V NUMBER | 07003000 |
| | 24+45 MISSION STORE 6 LAUNCH GATE SWITCH NUMBERS | 07003100 |
| | 24+413 "MISSION CYCLIC FLYING 4722 33AL" SWITCH NUMBERS | 07003200 |
| | 24+415 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07003300 |
| | 24+428 SAVEVALUE NUMBERS = FLIGHT 24V24V BY MISSION | 07003400 |
| | 24+428 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07003500 |
| | (320-220)X24 TIME REMAINING TO 0800 NEXT DAY | 07003600 |
| | 210210 TIME OF DAY-24V24V 24V24V 24V24V | 07003700 |
| | 2100+21(1,10) 24V24V 24V24V 24V24V 24V24V 24V24V | 07003800 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07003900 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004000 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004100 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004200 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004300 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004400 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004500 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004600 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004700 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004800 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07004900 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07005000 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07005100 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07005200 |
| | 24V24V 24V24V 24V24V 24V24V 24V24V 24V24V | 07005300 |

| | | | |
|-----|----------|---|----------|
| 39 | VARIABLE | 140-21-240 TIME REMAINING - FIRST SHIFT | 00005400 |
| 39 | VARIABLE | P4-P20 ENT IN EXCESS OF CURRENT SHIFT LENGTH | 00005500 |
| 40 | VARIABLE | P2+20 SAVEVALUE NUMBERS, NUMBER OF P2 HOURS/SHIFT | 00005600 |
| 41 | VARIABLE | P19+30 SAVEVALUE NUMBERS, NUMBER OF HOURS/P19 EVENT | 00005700 |
| 42 | VARIABLE | P3+100+P5 ELEMENT NUMBER | 00005800 |
| 43 | VARIABLE | P437/1000 PROBABILITY OF R & R | 00005900 |
| 44 | VARIABLE | P22/100 ELEMENT SYSTEM NUMBER | 00006000 |
| 47 | VARIABLE | P1+25 PARAMETER IDENTIFICATION - WORK CENTER | 00006100 |
| 49 | VARIABLE | P440/10000 99/99 WORK CENTER | 00006200 |
| 50 | VARIABLE | P440+10000/100 ORGANIZATIONAL SECONDARY WORK CENTER | 00006300 |
| 51 | VARIABLE | P440+100 ORGANIZATIONAL PRIMARY WORK CENTER | 00006400 |
| 51 | VARIABLE | P1+25 PARAMETER IDENTIFICATION - M.P. | 00006500 |
| 52 | VARIABLE | P442/10000 99/99 MANPOWER (M.P.) | 00006600 |
| 53 | VARIABLE | P442+10000/100 ORGANIZATIONAL SECONDARY M.P. | 00006700 |
| 54 | VARIABLE | P442+100 ORGANIZATIONAL PRIMARY M.P. | 00006800 |
| 55 | VARIABLE | 100+(P443+1000+P436+500)/1000 NEXT - R & R | 00006900 |
| 56 | VARIABLE | P4+10 UNITS CONVERSION | 00007000 |
| 57 | VARIABLE | (4X1(4,5)+P436+500)/1000 MEAN GSE DELAY TIME | 00007100 |
| 59 | VARIABLE | P2+37 SAVEVALUE NUMBERS-JUSTIFIED MM BY WORK CENTER | 00007200 |
| 59 | VARIABLE | 1+3V4 MATRIX COLUMN IDENTIFICATION | 00007300 |
| 60 | VARIABLE | 41+410 UNITS CONVERSION | 00007400 |
| 61 | VARIABLE | P445 DELAY TIME TO OBTAIN PART | 00007500 |
| 62 | VARIABLE | 484393-484394 WORK TEST VALUE | 00007600 |
| 63 | VARIABLE | P2+409 SAVEVALUE NUMBERS-EQUALIZATION MM BY WORK | 00007700 |
| 64 | VARIABLE | P1+21 TIME WHEN PART BECOMES AVAILABLE | 00007800 |
| 65 | VARIABLE | (P443/1000+P436+500)/1000 GPP-EQUIPMENT RPR NEXT | 00007900 |
| 66 | VARIABLE | P443/1000 GPP-EQUIPMENT REPAIR TIME | 00008000 |
| 67 | VARIABLE | P29+456 STOCKS INDEX FOR 99 WORK CENTERS | 00008100 |
| 69 | VARIABLE | P29+445 QUEUE INDEX FOR 99 WORK CENTERS | 00008200 |
| 69 | VARIABLE | P29+463 SAVEVALUE NUMBERS FOR WORK CENTER TOTAL MM'S | 00008300 |
| 70 | VARIABLE | P31+94 MAN HOURS X 100 | 00008400 |
| 71 | VARIABLE | P437+1000 PERCENT ELEMENTS REPAIRED @ GS | 00008500 |
| 72 | VARIABLE | P447/1000 PERCENT ELEMENTS WRTS (1-8) @ GS | 00008600 |
| 73 | VARIABLE | P440+100 PERCENT ELEMENTS WRTS (9) @ GS | 00008700 |
| 73 | VARIABLE | P3+4X3(42,4)-21 DELAY TIME IN MPC/SHIFT ROUTINE | 00008800 |
| 74 | VARIABLE | P4+2+1 NUMBER OF MEN STILL REQUIRED | 00008900 |
| 77 | VARIABLE | P4+44 SECOND SHIFT WORK CENTER CHAIN/STORE INDEX | 00009000 |
| 79 | VARIABLE | P4+33 FIRST SHIFT WORK CENTER CHAIN/STORE INDEX | 00009100 |
| 79 | VARIABLE | P3+99 TIME INTERVAL | 00009200 |
| 80 | VARIABLE | P2+48+4(K3-P18) MANPOWER REDUCTION MATRIX INDEX | 00009300 |
| 91 | VARIABLE | 121+94+K11(K3-P18) MANPOWER CONTROL CHAIN/STORE INDEX | 00009400 |
| 92 | VARIABLE | P9-21003 MANPOWER REDUCTION CONTROL TIME | 00009500 |
| 93 | VARIABLE | P6-4+7 MANPOWER DIFFERENCE | 00009600 |
| 94 | VARIABLE | 4X1(5,2)+4X1(5,3)+4X1(5,4) MAN HOUR SUMMATION | 00009700 |
| 135 | VARIABLE | P431/1000 ELEMENT PROBABILITY OF ROR | 00009800 |
| 136 | VARIABLE | P454+100 MANPOWER - IN EQUIPMENT REPAIR | 00009900 |
| 137 | VARIABLE | P454/100 MANPOWER - IN EQUIPMENT REPAIR | 00010000 |
| 139 | VARIABLE | (P453/1000+P436+500)/1000 EMET-ON EQUIPMENT REPAIR | 00010100 |
| 139 | VARIABLE | P452/1000 PROBABILITY OF REPAIR BY 99 | 00010200 |
| 140 | VARIABLE | P452+1000 PROBABILITY OF REPAIR BY 99 | 00010300 |
| 141 | VARIABLE | P29+477 STOCKS INDEX FOR 99 WORK CENTERS | 00010400 |
| 142 | VARIABLE | P29+456 QUEUE INDEX FOR 99 WORK CENTERS | 00010500 |
| 143 | VARIABLE | P28+95 SAVEVALUE NUMBERS FOR WORK CENTERS TOTAL MM'S | 00010600 |
| 144 | VARIABLE | C41+43ARM14 AIRCRAFT AVAILABLE NEXT AM | 00010700 |
| 145 | VARIABLE | 240-03-P2 WORK-SHIFT HOURS | 00010800 |

7 Floating point variable (Fvariable) 146 has been modified due to the increased number of aircraft the model now encompasses. If it is desired to operate the model "on condition", use a dummy input as follows:

Initial MH6(26, 1-24), K30000

8 Variable 147 has been generalized to make it a function of the input parameter save value X189 (the PMP interval). This variable is employed in the model's PMP logic test. It was felt that the model should be suitable for changes in PMP intervals without logic change. Thus, this variable was defined to make the PMP logic test functionally dependent upon an input rather than logically dependent upon a constant, as was previously the case.

9 Variable 148 was generalized in the same manner as variable 147. Variable 148 is employed in the PMI logic tests within the model. Again, it was felt that all PMI logic should be generalized to be a function of input parameters, rather than allowing logic to be dependent functionally upon a constant within the coding of the model.

10 Variable 150 has been modified, due to the increase in model size to accommodate a platoon size of 24 aircraft.

137

11 Variables 206 through 211 have been modified to provide new save value numbers for test hop flight hours, aborted flights, and aborted hours. This change was made necessary by modifying the model to handle 24 aircraft.

12 Floating point variables 214 and 215 have been modified to use the new save value numbers for aborted and test hop flight hours in the maintenance man-hour per flight-hour calculation and platoon flight time summation, respectively.

13 Floating point variable 216 has been modified to make the availability dependent upon input definition of the run duration, rather than functionally dependent upon a constant within the variable.

This has been accomplished by incorporating MX1 (5,1) (run duration) in the variable statement in place of the original value of 6720. Furthermore, this variable has been modified to handle NORS time by inclusion of X*3.

14 Floating point variable 217 has also been modified to generalize the availability for the platoon with respect to the number of aircraft per platoon and the run duration of the simulation, by use of X191 and MX1(5,1), respectively. Also, this variable required modification to allow for the accountability of NORS downtime which was previously not considered in the baseline UH-1 Government-furnished model. The NORS delays are administered by inclusion of X1425 in the variable definition.

15 Floating point variable 220 has been modified to employ the new save value number for platoon-aborted flight hours in the availability calculation.

16 Variable 231 has been defined to generate a six-digit random number module X189, which is the PMP interval. This variable is employed in routine ZZB of the model, to initialize the P40 value that is representative of the initial airframe values of each aircraft. This variable provides generality in that the modulization based on X189, which is an input parameter, enables the airframes to be initialized with values ranging from 1/10 of an hour to 99,999.9 hours. If the situation were ever to arise that a PMP interval of greater than 100,000 hours was desired, this variable would require redefinition.

17 Variable 232 has been established to define save values for the accounting of NORS per aircraft. P14 keeps track of the tail number of each aircraft and, with the constant K 1400 added to it, ensures save values in the range from 1401 to 1424 for NORS accounting.

| | | | |
|-----|---------|--|----------|
| 234 | VARIABL | $(1551 \div 10)$ SAVEVALUE 47-9414JLATION TEST 45PR BY ACPT | 07016000 |
| 235 | VARIABL | $(750 \div 10)$ SAVEVALUE 47-4344JLATION TEST 47PR BY ACPT R/M | 00016100 |
| 236 | VARIABL | $(1475 \div 10)$ TEST 47P FLT. 429 SAVE 47.9-TOTAL | 07016200 |
| 237 | VARIABL | $(775 \div 10)$ TEST 47P FLT. 429 SAVE 47.9-MONTHLY | 00016300 |
| 238 | VARIABL | $(1373 \div 10)$ FLT. 430RTS- SAVE 47.9 - TOTAL | 00016400 |
| 239 | VARIABL | $(1823 \div 10)$ FLT. 430RTS- SAVE 47.9 - MONTHLY | 07016500 |
| 240 | VARIABL | $(1500 \div 10)$ 430RT FLIGHT 47J99- SAVE 47.9-TOTAL | 00016600 |
| 241 | VARIABL | $(1833 \div 10)$ 430RT FLIGHT 47J99- SAVE 47.9-MONTHLY | 07016700 |
| 242 | VARIABL | $(401 \div 10)$ SAVEVALUE 9444JLATION & JNITS CONVERSION | 07016800 |
| 243 | VARIABL | $07/(403 \div 10)$ CONVERSION TO RATIO | 00016900 |
| 244 | VARIABL | $(4551 \div 10)$ $(4275 \div 10)$ AVAIL. CALC. | 07017000 |
| 245 | VARIABL | $4275 \div 10$ SAVEVALUE 9444JLATION | 07017100 |
| 246 | VARIABL | $(41 - 401 \div 10) \div 10$ 47C AVAIL TIME | 00017200 |
| 247 | VARIABL | $(4191 \div 10) - 4075 - 41825 \div 10$ $(4191 \div 10)$ | 07017300 |
| 248 | VARIABL | $401 \div 10$ 4000/402 ACPT 47P FLT. AVAIL PERCENT 4799JN COM | 07017400 |
| 249 | VARIABL | $(401 \div 10)$ 4000/402 ACPT 47P FLT. AVAIL, 4799JN RATIO | 07017500 |
| 250 | VARIABL | $(4231 \div 10)$ 4000/4225 47P FLT. 47P FLT. AVAIL, PERCENT 4799JN COM | 07017600 |
| 251 | VARIABL | $4231 \div 10$ 4000/4225 47P FLT. 47P FLT. AVAIL, PERCENT 4799JN COM | 07017700 |
| 252 | VARIABL | $418 \div 10$ 4225 SAVEVALUE 47-4344JLATION 47P FLT. BY ACPT | 07017800 |
| 253 | VARIABL | $418 \div 10$ 4225 SAVEVALUE 47-4344JLATION 47P FLT. BY ACPT | 07017900 |
| 254 | VARIABL | $51 \div 10$ 4320 4300 437 | 07018000 |
| 255 | VARIABL | $(331 \div 10)$ 437 | 07018100 |
| 256 | VARIABL | $(331 \div 10)$ 437 | 07018200 |
| 257 | VARIABL | $(331 \div 10)$ 437 | 07018300 |
| 258 | VARIABL | $(331 \div 10)$ 437 | 07018400 |
| 259 | VARIABL | $(411 \div 10) \div (411 \div 10)$ 4199/101 | 07018500 |
| 260 | VARIABL | $(411 \div 10) \div (411 \div 10)$ 4199/101 | 07018600 |
| 261 | VARIABL | $411 \div 10$ 410006241 | 07018700 |
| 262 | VARIABL | $411 \div 10$ 4100 | 07018800 |

18 Variable 234 has been defined to generalize the interaction between PMP interval, defined by input X189, and the mission duration, defined through function table 4. This variable established a window, so to speak, through which a PMP inspection can be activated. For example, if X189, the PMP interval, is 100 hours and the value chosen from function table 4 is 2 hours, as a mission length, the value of V234 is 98 hours. This variable is then employed in the logic to test if the time on the aircraft is greater than or equal to 98 hours, yet less than 100 hours. If this is the case, the aircraft requires and, therefore, receives a PMP inspection. The original logic of the model employed constants in these tests, which meant that the model functionally and logically was dependent upon the PMP interval and mission length of the UK-1 aircraft. Thus, this area was modified to provide generality to help accomplish the required comparative analysis.

19 Variable 235 has been defined to perform a function similar to that of variable 234, except that variable 235 is employed to define the window through which the PMI inspection logic is accessible.

20 Variable 236 defines a window by which the calendar PMP logic is activated.

21 Variable 237 generates a -720 for use in the checks for daily maintenance whenever 3 nonflying days in a row are encountered.

22 Variable 239 tabulates the time since last daily inspection.

23 Variable 240 established save values to count the number of dailies.

24 Variable 241 establishes save values for tabulating missions completed.

25 Boolean variable (BVARIABLE) 17 has been generalized through the use of input X194 - the number of ready aircraft required to hold maintenance personnel overtime - rather than a constant in the variable definition.

26 Boolean variable 19 is a new variable which has been defined to preclude maintenance being performed during off-shift hours.

27 Boolean variable 20 has been added to ensure that only flying aircraft get dailies (except when 72 nonflying hours expire).

| | | | | | | |
|----|-----|--------|-----------|---------|----------------------|----------|
| 18 | | | | | | |
| 19 | 034 | VARTAL | X199-PV4 | GENERAL | | 00019000 |
| 20 | 035 | VARTAL | X199-PV4 | GENERAL | | 00019000 |
| 21 | 036 | VARTAL | X199-X196 | | 000 CALENDAR WYNDOM | 00019010 |
| 22 | 037 | VARTAL | 720-1000 | | DAILY REGTIME | 00019011 |
| 23 | 038 | VARTAL | C1-P45 | | | 00019020 |
| 24 | 039 | VARTAL | 01-125 | | DAILY REGTIME | 00019030 |
| 25 | 040 | VARTAL | 01-225 | | WISSITING COMPLETED | 00019060 |
| 26 | 041 | VARTAL | 01-225 | | 0004V 47 POST FLIGHT | 00019100 |
| 27 | 042 | VARTAL | 01-225 | | 0004V 47 REGTIME | 00019200 |
| 28 | 043 | VARTAL | V20'3'250 | | | 00019300 |
| 29 | 044 | VARTAL | V20'3'250 | | | 00019400 |
| 30 | 045 | VARTAL | V20'3'250 | | | 00019500 |
| 31 | 046 | VARTAL | V20'3'250 | | | 00019600 |
| 32 | 047 | VARTAL | V20'3'250 | | | 00019700 |
| 33 | 048 | VARTAL | V20'3'250 | | | 00019800 |
| 34 | 049 | VARTAL | V20'3'250 | | | 00019900 |
| 35 | 050 | VARTAL | V20'3'250 | | | 00020000 |
| 36 | 051 | VARTAL | V20'3'250 | | | 00020010 |
| 37 | 052 | VARTAL | V20'3'250 | | | 00020020 |
| 38 | 053 | VARTAL | V20'3'250 | | | 00020030 |
| 39 | 054 | VARTAL | V20'3'250 | | | 00020040 |
| 40 | 055 | VARTAL | V20'3'250 | | | 00020050 |
| 41 | 056 | VARTAL | V20'3'250 | | | 00020060 |
| 42 | 057 | VARTAL | V20'3'250 | | | 00020070 |
| 43 | 058 | VARTAL | V20'3'250 | | | 00020080 |
| 44 | 059 | VARTAL | V20'3'250 | | | 00020090 |
| 45 | 060 | VARTAL | V20'3'250 | | | 00020100 |
| 46 | 061 | VARTAL | V20'3'250 | | | 00020110 |
| 47 | 062 | VARTAL | V20'3'250 | | | 00020120 |
| 48 | 063 | VARTAL | V20'3'250 | | | 00020130 |
| 49 | 064 | VARTAL | V20'3'250 | | | 00020140 |
| 50 | 065 | VARTAL | V20'3'250 | | | 00020150 |
| 51 | 066 | VARTAL | V20'3'250 | | | 00020160 |
| 52 | 067 | VARTAL | V20'3'250 | | | 00020170 |
| 53 | 068 | VARTAL | V20'3'250 | | | 00020180 |
| 54 | 069 | VARTAL | V20'3'250 | | | 00020190 |
| 55 | 070 | VARTAL | V20'3'250 | | | 00020200 |
| 56 | 071 | VARTAL | V20'3'250 | | | 00020210 |
| 57 | 072 | VARTAL | V20'3'250 | | | 00020220 |
| 58 | 073 | VARTAL | V20'3'250 | | | 00020230 |
| 59 | 074 | VARTAL | V20'3'250 | | | 00020240 |
| 60 | 075 | VARTAL | V20'3'250 | | | 00020250 |
| 61 | 076 | VARTAL | V20'3'250 | | | 00020260 |
| 62 | 077 | VARTAL | V20'3'250 | | | 00020270 |
| 63 | 078 | VARTAL | V20'3'250 | | | 00020280 |
| 64 | 079 | VARTAL | V20'3'250 | | | 00020290 |
| 65 | 080 | VARTAL | V20'3'250 | | | 00020300 |
| 66 | 081 | VARTAL | V20'3'250 | | | 00020310 |
| 67 | 082 | VARTAL | V20'3'250 | | | 00020320 |
| 68 | 083 | VARTAL | V20'3'250 | | | 00020330 |
| 69 | 084 | VARTAL | V20'3'250 | | | 00020340 |
| 70 | 085 | VARTAL | V20'3'250 | | | 00020350 |
| 71 | 086 | VARTAL | V20'3'250 | | | 00020360 |
| 72 | 087 | VARTAL | V20'3'250 | | | 00020370 |
| 73 | 088 | VARTAL | V20'3'250 | | | 00020380 |
| 74 | 089 | VARTAL | V20'3'250 | | | 00020390 |
| 75 | 090 | VARTAL | V20'3'250 | | | 00020400 |

28 Matrix 6 has been expanded to handle up to 24 aircraft and 24 TBO items.

29 Function table 2 has been modified by inclusion of Event 8 - PMI probability of success.

29 Function 9. This sorting function has been modified by the addition of the event number 8 and its subsequent functional value of FN56. The inclusion of this change to the function table enables the model to detect multiple maintenance actions at the intermediate inspection through function table 56.

29 Function table 15. This is a sorting function that has been modified by the addition of element number 8 and its function value FN57. Function 57 is the table defined which provides the probability of maintenance by various systems, given a maintenance action at the intermediate inspection.

| | | | | | |
|----|----|----------|----------|--|-----------|
| 29 | 10 | FUNCTION | AVI, 20 | WHEN DISCOVERED SHORT MULTI-FAILURE | 0.0026200 |
| | 2 | FA11 5 | FA13 6 | FA10 7 | FA10 8 |
| | 16 | FA12 17 | FA14 21 | FA51 | FA50 12 |
| | | | | | FA11 |
| | | | | | 0.0026300 |
| | | | | | 0.0026400 |
| | | | | | 0.0026500 |
| | | | | | 0.0026600 |
| | | | | | 0.0026700 |
| | 10 | FUNCTION | AVI, 20 | SHORT MULTI 44/44 DURING FLIGHT | 0.0026800 |
| | | 0.00001 | 0.00002 | 0.00003 | 0.00004 |
| | | | | | 0.0026900 |
| | | | | | 0.0027000 |
| | | | | | 0.0027100 |
| | 11 | FUNCTION | AVI, 23 | SHORT MULTI 44/44 DURING PREFLIGHT | 0.0027200 |
| | | 0.00001 | 0.00002 | 0.00003 | |
| | | | | | 0.0027300 |
| | | | | | 0.0027400 |
| | | | | | 0.0027500 |
| | 12 | FUNCTION | AVI, 26 | (MULT 44/44 D DAILY) | 0.0027600 |
| | | 0.10000 | 0.30003 | 0.50004 | 0.70005 |
| | | | | | 0.90006 |
| | | | | | 0.99997 |
| | | | | | 0.0027700 |
| | | | | | 0.0027800 |
| | | | | | 0.0027900 |
| | 13 | FUNCTION | AVI, 22 | SHORT MULTI 44/44 DURING AIRCREW | 0.0028000 |
| | | 0.00001 | 0.00002 | | |
| | | | | | 0.0028100 |
| | | | | | 0.0028200 |
| | | | | | 0.0028300 |
| | 14 | FUNCTION | AVI, 25 | (MULT 44/44 D DAILY) | 0.0028400 |
| | | 0.10000 | 0.20003 | 0.30004 | 0.40005 |
| | | | | | 0.50006 |
| | | | | | 0.60007 |
| | | | | | 0.70008 |
| | | | | | 0.80009 |
| | | | | | 0.90010 |
| | | | | | 0.99991 |
| 29 | 15 | FUNCTION | AVI, 28 | WHEN DISCOVERED SHORT SYSTEM FAILURE | 0.0029000 |
| | 2 | FA10 5 | FA16 6 | FA17 7 | FA19 8 |
| | 16 | FA20 17 | FA21 | FA57 12 | FA19 |
| | | | | | 0.0029100 |
| | | | | | 0.0029200 |
| | 16 | FUNCTION | AVI, 31 | SYSTEM 44 AIRCREW/44 AIRCREW | 0.0029300 |
| | | 0.244101 | 0.265612 | 0.362503 | 0.401002 |
| | | 0.566107 | 0.595308 | 0.703109 | 0.752210 |
| | 17 | FUNCTION | AVI, 31 | SYSTEM 44 IN-FLIGHT/44 IN-FLIGHT | 0.0029400 |
| | | 0.244101 | 0.265602 | 0.362503 | 0.401002 |
| | | 0.566107 | 0.595308 | 0.703109 | 0.752210 |
| | 18 | FUNCTION | AVI, 32 | SYSTEM 44 AIRCREW IN-FLIGHT/44 IN-FLIGHT | 0.0029500 |
| | | 0.244101 | 0.265602 | 0.362503 | 0.401002 |
| | | 0.566107 | 0.595308 | 0.703109 | 0.752210 |
| | 19 | FUNCTION | AVI, 32 | SYSTEM 44 AIRCREW IN-FLIGHT/44 IN-FLIGHT | 0.0029600 |
| | | 0.244101 | 0.265602 | 0.362503 | 0.401002 |
| | | 0.566107 | 0.595308 | 0.703109 | 0.752210 |
| | 20 | FUNCTION | AVI, 31 | SYSTEM 44 PREFLIGHT/44 PREFLIGHT | 0.0029700 |
| | | 0.244101 | 0.265602 | 0.362503 | 0.401002 |
| | | 0.566107 | 0.595308 | 0.703109 | 0.752210 |
| | 21 | FUNCTION | AVI, 31 | SYSTEM 44 DAILY/44 DAILY | 0.0029800 |
| | | 0.244101 | 0.303602 | 0.393003 | 0.429304 |
| | | 0.566107 | 0.634208 | 0.750209 | 0.880310 |
| | 22 | FUNCTION | AVI, 31 | SYSTEM 44 PERIODIC/44 PERIODIC | 0.0029900 |
| | | 0.244101 | 0.363002 | 0.429503 | 0.480304 |
| | | | | | 0.473905 |
| | | | | | 0.510906 |
| | | | | | 0.0030000 |
| | | | | | 0.0030100 |
| | | | | | 0.0030200 |
| | | | | | 0.0030300 |
| | | | | | 0.0030400 |
| | | | | | 0.0030500 |
| | | | | | 0.0030600 |
| | | | | | 0.0030700 |
| | | | | | 0.0030800 |
| | | | | | 0.0030900 |
| | | | | | 0.0031000 |
| | | | | | 0.0031100 |
| | | | | | 0.0031200 |

29 Function table 23. Again, this is a sorting function that has been modified by the addition of element number 8 and its function value FN 29. Function 29 provides the probability of any element of a system being detected as a failed item in a system, given a maintenance action in this system. Due to the paucity of data on the CH-47C and HLH at the elemental level, this function table is the same as the function table employed at the periodic inspection. If data on another aircraft was of such a quantity that a distinction could be drawn between the elemental probability of occurrence between the intermediate inspection and periodic inspection, it would be suggested that function table 23 be modified to use a function value of FN58 for element number 8 and a new function table 58 be defined of a form similar to that of function table 29. This would give the elemental probability of occurrence at the intermediate inspection, given a system maintenance action at the intermediate inspection.

| 0.560007 | | 0.570009 | | 0.620003 | | 0.703510 | | 0.999911 | | | | |
|----------|----|----------|----|----------|----|-----------|----|---------------------|----|----|----|--|
| 22 | | FUNCTION | | P3, L11 | | 4J432A 3F | | ELEMENTS IN SYSTEMS | | | | |
| 01 | 26 | 02 | 10 | 03 | 62 | 04 | 95 | 05 | 19 | 06 | 12 | |
| 07 | 27 | 09 | 04 | 09 | 42 | 10 | 23 | 11 | 34 | | | |
| 00031300 | | | | | | | | | | | | |
| 00031400 | | | | | | | | | | | | |
| 00031500 | | | | | | | | | | | | |
| 00031600 | | | | | | | | | | | | |
| 00031700 | | | | | | | | | | | | |
| 00031800 | | | | | | | | | | | | |
| 00031900 | | | | | | | | | | | | |
| 00032000 | | | | | | | | | | | | |
| 00032100 | | | | | | | | | | | | |
| 00032200 | | | | | | | | | | | | |
| 00032300 | | | | | | | | | | | | |
| 00032400 | | | | | | | | | | | | |
| 00032500 | | | | | | | | | | | | |
| 00032600 | | | | | | | | | | | | |
| 00032700 | | | | | | | | | | | | |
| 00032800 | | | | | | | | | | | | |
| 00032900 | | | | | | | | | | | | |
| 00033000 | | | | | | | | | | | | |
| 00033100 | | | | | | | | | | | | |
| 00033200 | | | | | | | | | | | | |
| 00033300 | | | | | | | | | | | | |
| 00033400 | | | | | | | | | | | | |
| 00033500 | | | | | | | | | | | | |
| 00033600 | | | | | | | | | | | | |
| 00033700 | | | | | | | | | | | | |
| 00033800 | | | | | | | | | | | | |
| 00033900 | | | | | | | | | | | | |
| 00034000 | | | | | | | | | | | | |
| 00034100 | | | | | | | | | | | | |
| 00034200 | | | | | | | | | | | | |
| 00034300 | | | | | | | | | | | | |
| 00034400 | | | | | | | | | | | | |
| 00034500 | | | | | | | | | | | | |
| 00034600 | | | | | | | | | | | | |
| 00034700 | | | | | | | | | | | | |
| 00034800 | | | | | | | | | | | | |
| 00034900 | | | | | | | | | | | | |
| 00035000 | | | | | | | | | | | | |
| 00035100 | | | | | | | | | | | | |
| 00035200 | | | | | | | | | | | | |
| 00035300 | | | | | | | | | | | | |
| 00035400 | | | | | | | | | | | | |
| 00035500 | | | | | | | | | | | | |
| 00035600 | | | | | | | | | | | | |
| 00035700 | | | | | | | | | | | | |
| 00035800 | | | | | | | | | | | | |
| 00035900 | | | | | | | | | | | | |
| 00036000 | | | | | | | | | | | | |
| 00036100 | | | | | | | | | | | | |
| 00036200 | | | | | | | | | | | | |
| 00036300 | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|----------|
| 0022 | 015 | 1023 | 002 | 1002 | 020 | 1002 | 025 | 1003 | 011 | 1003 | 031 | 00035000 |
| 0024 | 017 | 1024 | 003 | 1003 | 011 | 1005 | 104 | 1005 | 002 | 1006 | 002 | 00035500 |
| 0027 | 032 | 1027 | 017 | 1004 | 010 | 1004 | 020 | 1000 | 007 | 1000 | 000 | 00035500 |
| 0010 | 011 | 1010 | 007 | 1010 | 015 | 1011 | 015 | 1011 | 070 | 1012 | 031 | 00035700 |
| 0012 | 013 | 1012 | 011 | 1101 | 010 | 1102 | 013 | 1102 | 016 | 1102 | 001 | 00035800 |
| 0104 | 011 | 1103 | 003 | 1103 | 014 | 1103 | 123 | 1104 | 000 | 1105 | 012 | 00036300 |
| 0115 | 015 | 1104 | 002 | 1107 | 015 | 1107 | 025 | 1108 | 001 | 1108 | 005 | 00037000 |
| 0100 | 013 | 1102 | 015 | 1110 | 010 | 1110 | 021 | 1111 | 001 | 1111 | 004 | 00037100 |
| 0112 | 053 | 1112 | 031 | 1113 | 022 | 1113 | 007 | 1114 | 015 | 1114 | 001 | 00037200 |
| 0115 | 011 | 1115 | 003 | 1116 | 021 | 1116 | 001 | 1117 | 000 | | | 00037300 |
| 25 | 010 | 1101 | 015 | 1102 | 010 | 0102 | 011 | 0103 | 142 | 0103 | 006 | 00037500 |
| 0100 | 013 | 0100 | 010 | 0105 | 012 | 0105 | 011 | 0106 | 011 | 0106 | 005 | 00037600 |
| 0107 | 014 | 0107 | 002 | 0109 | 175 | 0108 | 102 | 0109 | 012 | 0109 | 001 | 00037700 |
| 0110 | 004 | 0110 | 002 | 0111 | 010 | 0111 | 011 | 0112 | 050 | 0112 | 023 | 00037800 |
| 0113 | 031 | 0113 | 007 | 0201 | 014 | 0202 | 012 | 0202 | 002 | 0203 | 021 | 00037900 |
| 0203 | 037 | 0204 | 070 | 0204 | 054 | 0205 | 031 | 0205 | 030 | 0206 | 012 | 00038000 |
| 0206 | 004 | 0207 | 041 | 0208 | 004 | 0208 | 012 | 0209 | 012 | 0209 | 001 | 00038100 |
| 0210 | 004 | 0211 | 005 | 0301 | 102 | 0301 | 013 | 0301 | 054 | 0302 | 003 | 00038200 |
| 0302 | 000 | 0302 | 003 | 0303 | 013 | 0303 | 025 | 0303 | 001 | 0304 | 011 | 00038300 |
| 0304 | 032 | 0305 | 000 | 0306 | 001 | 0307 | 011 | 0308 | 001 | 0308 | 001 | 00038500 |
| 0309 | 013 | 0310 | 002 | 0311 | 013 | 0312 | 012 | 0313 | 003 | 0314 | 001 | 00038500 |
| 0315 | 011 | 0316 | 011 | 0317 | 013 | 0318 | 011 | 0319 | 003 | 0320 | 002 | 00038600 |
| 0321 | 015 | 0322 | 001 | 0323 | 001 | 0324 | 011 | 0325 | 001 | 0326 | 003 | 00038700 |
| 0327 | 013 | 0328 | 002 | 0329 | 025 | 0330 | 013 | 0331 | 012 | 0332 | 003 | 00038800 |
| 0333 | 013 | 0334 | 005 | 0335 | 013 | 0336 | 010 | 0337 | 011 | 0337 | 001 | 00038900 |
| 0338 | 010 | 0339 | 022 | 0340 | 020 | 0340 | 012 | 0341 | 001 | 0342 | 000 | 00039000 |
| 0343 | 010 | 0344 | 010 | 0345 | 021 | 0345 | 010 | 0346 | 010 | 0347 | 012 | 00039100 |
| 0348 | 010 | 0349 | 000 | 0350 | 010 | 0351 | 023 | 0351 | 013 | 0401 | 025 | 00039200 |
| 0401 | 014 | 0402 | 015 | 0403 | 010 | 0403 | 012 | 0403 | 004 | 0404 | 007 | 00039300 |
| 0405 | 017 | 0405 | 015 | 0405 | 022 | 0406 | 003 | 0406 | 010 | 0407 | 021 | 00039400 |
| 0407 | 052 | 0408 | 017 | 0409 | 000 | 0409 | 012 | 0409 | 014 | 0410 | 002 | 00039500 |
| 0410 | 030 | 0411 | 012 | 0412 | 012 | 0412 | 037 | 0413 | 010 | 0413 | 005 | 00039600 |
| 0411 | 012 | 0501 | 024 | 0501 | 015 | 0502 | 017 | 0502 | 014 | 0503 | 016 | 00039700 |
| 0415 | 024 | 0504 | 001 | 0504 | 010 | 0505 | 013 | 0505 | 005 | 0506 | 023 | 00039800 |
| 0416 | 010 | 0507 | 033 | 0507 | 024 | 0508 | 012 | 0508 | 013 | 0509 | 007 | 00039900 |
| 0410 | 014 | 0601 | 001 | 0601 | 017 | 0602 | 015 | 0603 | 011 | 0603 | 006 | 00040000 |
| 0410 | 024 | 0602 | 017 | 0605 | 011 | 0605 | 020 | 0606 | 027 | 0606 | 003 | 00040100 |
| 0417 | 043 | 0701 | 011 | 0702 | 011 | 0702 | 017 | 0703 | 001 | 0703 | 000 | 00040200 |
| 0704 | 013 | 0704 | 053 | 0705 | 010 | 0705 | 017 | 0707 | 005 | 0707 | 013 | 00040300 |
| 0708 | 035 | 0708 | 015 | 0709 | 010 | 0709 | 012 | 0709 | 001 | 0710 | 003 | 00040400 |
| 0710 | 021 | 0711 | 074 | 0711 | 013 | 0712 | 011 | 0712 | 012 | 0713 | 018 | 00040500 |
| 0713 | 011 | 0713 | 011 | 0713 | 015 | 0715 | 011 | 0801 | 010 | 0801 | 374 | 00040600 |
| 0800 | 074 | 0800 | 015 | 0801 | 025 | 0801 | 015 | 0801 | 012 | 0802 | 005 | 00040700 |
| 0802 | 037 | 0802 | 011 | 0803 | 017 | 0803 | 010 | 0804 | 010 | 0804 | 035 | 00040800 |
| 0803 | 014 | 0805 | 007 | 0805 | 026 | 0805 | 016 | 0805 | 010 | 0807 | 006 | 00040900 |
| 0807 | 028 | 0807 | 011 | 0808 | 022 | 0808 | 012 | 0809 | 011 | 0809 | 012 | 00041000 |
| 0808 | 015 | 0810 | 015 | 0810 | 014 | 0811 | 014 | 0811 | 012 | 0812 | 002 | 00041100 |
| 0812 | 017 | 0813 | 012 | 0814 | 022 | 0815 | 014 | 0816 | 014 | 0817 | 001 | 00041200 |
| 0814 | 014 | 0814 | 010 | 0815 | 014 | 0820 | 011 | 0821 | 011 | 0821 | 001 | 00041300 |
| 0822 | 015 | 0823 | 002 | 1002 | 020 | 1002 | 025 | 1003 | 011 | 1003 | 031 | 00041400 |

| | | | | | | | | | | | | |
|------|--|------|-----|------|-----|------|-----|------|-----|------|-----|----------|
| 1008 | 007 | 1007 | 003 | 1005 | 011 | 1005 | 104 | 1006 | 002 | 1006 | 002 | 00001500 |
| 1007 | 002 | 1007 | 007 | 1009 | 000 | 1009 | 000 | 1009 | 007 | 1009 | 009 | 00001600 |
| 1010 | 011 | 1010 | 007 | 1010 | 005 | 1011 | 013 | 1011 | 009 | 1012 | 011 | 00001700 |
| 1012 | 005 | 1010 | 011 | 1010 | 010 | 1012 | 003 | 1012 | 016 | 1012 | 001 | 00001800 |
| 1013 | 011 | 1013 | 005 | 1013 | 000 | 1014 | 103 | 1014 | 000 | 1015 | 012 | 00001900 |
| 1015 | 009 | 1016 | 002 | 1017 | 014 | 1017 | 006 | 1019 | 001 | 1019 | 005 | 00002000 |
| 1019 | 003 | 1019 | 015 | 1011 | 000 | 1019 | 001 | 1011 | 001 | 1011 | 004 | 00002100 |
| 1012 | 033 | 1012 | 000 | 1013 | 002 | 1013 | 007 | 1014 | 015 | 1014 | 001 | 00002200 |
| 1014 | 001 | 1015 | 000 | 1016 | 021 | 1016 | 001 | 1017 | 000 | | | 00002300 |
| 25 | JUNCTION 0046.L203 0000 ELEMENT 44 0000 IN-FLIGHT/8V 0000 FLT 0000 | | | | | | | | | | | |
| 0101 | 000 | 0101 | 000 | 0102 | 000 | 0102 | 000 | 0103 | 000 | 0103 | 000 | 00002400 |
| 0104 | 000 | 0104 | 000 | 0105 | 000 | 0105 | 000 | 0106 | 000 | 0106 | 000 | 00002500 |
| 0107 | 000 | 0107 | 000 | 0109 | 000 | 0109 | 000 | 0109 | 000 | 0109 | 000 | 00002600 |
| 0110 | 000 | 0110 | 000 | 0111 | 000 | 0111 | 000 | 0112 | 000 | 0112 | 000 | 00002700 |
| 0113 | 000 | 0113 | 000 | 0201 | 000 | 0202 | 000 | 0202 | 000 | 0203 | 000 | 00002800 |
| 0203 | 000 | 0204 | 000 | 0204 | 000 | 0205 | 000 | 0205 | 000 | 0206 | 000 | 00002900 |
| 0204 | 000 | 0207 | 000 | 0209 | 000 | 0209 | 000 | 0209 | 000 | 0209 | 000 | 00003000 |
| 0210 | 000 | 0211 | 000 | 0211 | 000 | 0301 | 000 | 0301 | 000 | 0302 | 000 | 00003100 |
| 0302 | 000 | 0302 | 000 | 0303 | 000 | 0303 | 000 | 0303 | 000 | 0304 | 000 | 00003200 |
| 0308 | 000 | 0305 | 000 | 0306 | 000 | 0307 | 000 | 0308 | 000 | 0309 | 000 | 00003300 |
| 0309 | 000 | 0310 | 000 | 0311 | 000 | 0312 | 000 | 0313 | 000 | 0314 | 000 | 00003400 |
| 0315 | 000 | 0314 | 000 | 0317 | 000 | 0319 | 000 | 0319 | 000 | 0320 | 000 | 00003500 |
| 0321 | 000 | 0322 | 000 | 0323 | 000 | 0324 | 000 | 0325 | 000 | 0326 | 000 | 00003600 |
| 0327 | 000 | 0329 | 000 | 0329 | 000 | 0330 | 000 | 0331 | 000 | 0332 | 000 | 00003700 |
| 0331 | 000 | 0334 | 000 | 0335 | 000 | 0336 | 000 | 0337 | 000 | 0337 | 000 | 00003800 |
| 0338 | 000 | 0339 | 000 | 0339 | 000 | 0340 | 000 | 0341 | 000 | 0342 | 000 | 00003900 |
| 0343 | 000 | 0344 | 000 | 0345 | 000 | 0345 | 000 | 0346 | 000 | 0347 | 000 | 00004000 |
| 0348 | 000 | 0349 | 000 | 0350 | 000 | 0351 | 000 | 0351 | 000 | 0401 | 000 | 00004100 |
| 0401 | 000 | 0402 | 000 | 0402 | 000 | 0403 | 000 | 0403 | 000 | 0404 | 000 | 00004200 |
| 0405 | 000 | 0405 | 000 | 0405 | 000 | 0406 | 000 | 0406 | 000 | 0407 | 000 | 00004300 |
| 0407 | 000 | 0409 | 000 | 0409 | 000 | 0409 | 000 | 0409 | 000 | 0410 | 000 | 00004400 |
| 0410 | 000 | 0411 | 000 | 0412 | 000 | 0412 | 000 | 0413 | 000 | 0413 | 000 | 00004500 |
| 0501 | 000 | 0501 | 000 | 0501 | 000 | 0502 | 000 | 0502 | 000 | 0503 | 000 | 00004600 |
| 0503 | 000 | 0504 | 000 | 0504 | 000 | 0505 | 000 | 0505 | 000 | 0506 | 000 | 00004700 |
| 0506 | 000 | 0507 | 000 | 0507 | 000 | 0508 | 000 | 0509 | 000 | 0509 | 000 | 00004800 |
| 0509 | 000 | 0510 | 000 | 0511 | 000 | 0512 | 000 | 0603 | 000 | 0603 | 000 | 00004900 |
| 0604 | 000 | 0604 | 000 | 0605 | 000 | 0605 | 000 | 0606 | 000 | 0606 | 000 | 00005000 |
| 0607 | 000 | 0701 | 000 | 0702 | 000 | 0702 | 000 | 0703 | 000 | 0703 | 000 | 00005100 |
| 0704 | 000 | 0704 | 000 | 0705 | 000 | 0705 | 000 | 0707 | 000 | 0707 | 000 | 00005200 |
| 0709 | 000 | 0709 | 000 | 0709 | 000 | 0709 | 000 | 0709 | 000 | 0710 | 000 | 00005300 |
| 0710 | 000 | 0711 | 000 | 0711 | 000 | 0712 | 000 | 0712 | 000 | 0713 | 000 | 00005400 |
| 0713 | 000 | 0714 | 000 | 0715 | 000 | 0715 | 000 | 0801 | 000 | 0801 | 000 | 00005500 |
| 0802 | 000 | 0802 | 000 | 0901 | 000 | 0901 | 000 | 0901 | 000 | 0902 | 000 | 00005600 |
| 0902 | 000 | 0902 | 000 | 0903 | 000 | 0903 | 000 | 0904 | 000 | 0904 | 000 | 00005700 |
| 0904 | 000 | 0905 | 000 | 0905 | 000 | 0906 | 000 | 0906 | 000 | 0907 | 000 | 00005800 |
| 0907 | 000 | 0907 | 000 | 0909 | 000 | 0909 | 000 | 0909 | 000 | 0909 | 000 | 00005900 |
| 0909 | 000 | 0910 | 000 | 0910 | 000 | 0911 | 000 | 0911 | 000 | 0912 | 000 | 00006000 |
| 0912 | 000 | 0913 | 000 | 0914 | 000 | 0915 | 000 | 0916 | 000 | 0917 | 000 | 00006100 |
| 0919 | 000 | 0919 | 000 | 0919 | 000 | 0920 | 000 | 0921 | 000 | 0921 | 000 | 00006200 |
| 0922 | 000 | 0923 | 000 | 1002 | 000 | 1002 | 000 | 1003 | 000 | 1003 | 000 | 00006300 |
| 1003 | 000 | 1004 | 000 | 1005 | 000 | 1005 | 000 | 1006 | 000 | 1006 | 000 | 00006400 |

150

| | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|----------|
| 1100 | 011 | 1100 | 067 | 1100 | 035 | 1011 | 013 | 1011 | 070 | 1012 | 431 | 00051700 |
| 1102 | 035 | 1101 | 011 | 1101 | 014 | 1102 | 013 | 1102 | 014 | 1102 | 001 | 00051900 |
| 1103 | 011 | 1103 | 045 | 1103 | 018 | 1104 | 125 | 1104 | 040 | 1105 | 012 | 00051900 |
| 1105 | 039 | 1105 | 012 | 1107 | 016 | 1107 | 045 | 1109 | 001 | 1109 | 005 | 00052100 |
| 1109 | 033 | 1109 | 015 | 1110 | 030 | 1110 | 021 | 1111 | 001 | 1111 | 004 | 00052100 |
| 1112 | 033 | 1112 | 030 | 1113 | 032 | 1113 | 037 | 1114 | 015 | 1114 | 001 | 00052200 |
| 1115 | 031 | 1115 | 030 | 1116 | 021 | 1116 | 031 | 1117 | 030 | | | 00052300 |
| 09 | 011 | 011 | 011 | 011 | 011 | 011 | 011 | 011 | 011 | 011 | 011 | 00052400 |
| 0100 | 013 | 0100 | 004 | 0105 | 032 | 0105 | 031 | 0106 | 031 | 0106 | 005 | 00052600 |
| 0107 | 012 | 0107 | 032 | 0109 | 175 | 0109 | 132 | 0109 | 012 | 0109 | 001 | 00052700 |
| 0110 | 034 | 0110 | 032 | 0111 | 014 | 0111 | 010 | 0112 | 050 | 0112 | 023 | 00052900 |
| 0113 | 030 | 0113 | 037 | 0201 | 034 | 0202 | 012 | 0202 | 042 | 0203 | 021 | 00052900 |
| 0203 | 037 | 0204 | 074 | 0204 | 038 | 0205 | 031 | 0205 | 030 | 0206 | 012 | 00053000 |
| 0206 | 034 | 0207 | 041 | 0209 | 030 | 0209 | 012 | 0209 | 012 | 0209 | 031 | 00053100 |
| 0210 | 034 | 0211 | 034 | 0211 | 132 | 0301 | 013 | 0301 | 056 | 0302 | 003 | 00053200 |
| 0302 | 040 | 0302 | 033 | 0304 | 013 | 0305 | 025 | 0305 | 001 | 0306 | 011 | 00053300 |
| 0306 | 032 | 0306 | 032 | 0306 | 031 | 0307 | 031 | 0308 | 031 | 0308 | 001 | 00053400 |
| 0309 | 033 | 0310 | 032 | 0311 | 033 | 0312 | 032 | 0313 | 003 | 0314 | 001 | 00053500 |
| 0310 | 031 | 0310 | 031 | 0317 | 013 | 0318 | 031 | 0319 | 003 | 0320 | 002 | 00053600 |
| 0321 | 035 | 0322 | 031 | 0423 | 031 | 0324 | 031 | 0325 | 031 | 0326 | 003 | 00053700 |
| 0327 | 013 | 0328 | 032 | 0329 | 025 | 0330 | 003 | 0331 | 012 | 0332 | 003 | 00053800 |
| 0333 | 033 | 0334 | 035 | 0335 | 033 | 0336 | 030 | 0337 | 011 | 0337 | 001 | 00053900 |
| 0338 | 030 | 0339 | 032 | 0339 | 032 | 0340 | 032 | 0341 | 031 | 0342 | 000 | 00054000 |
| 0343 | 030 | 0344 | 031 | 0345 | 030 | 0346 | 030 | 0346 | 030 | 0347 | 002 | 00054100 |
| 0348 | 030 | 0349 | 031 | 0350 | 030 | 0351 | 033 | 0351 | 033 | 0401 | 025 | 00054200 |
| 0401 | 034 | 0402 | 035 | 0402 | 030 | 0403 | 012 | 0403 | 034 | 0404 | 007 | 00054300 |
| 0405 | 037 | 0406 | 016 | 0406 | 032 | 0406 | 042 | 0406 | 030 | 0407 | 001 | 00054400 |
| 0407 | 042 | 0408 | 037 | 0408 | 030 | 0409 | 032 | 0409 | 014 | 0410 | 002 | 00054500 |
| 0410 | 030 | 0411 | 032 | 0412 | 032 | 0412 | 057 | 0413 | 034 | 0413 | 005 | 00054600 |
| 0411 | 012 | 0411 | 034 | 0401 | 035 | 0402 | 037 | 0402 | 016 | 0403 | 006 | 00054700 |
| 0413 | 029 | 0414 | 041 | 0404 | 039 | 0405 | 033 | 0405 | 035 | 0406 | 023 | 00054800 |
| 0416 | 019 | 0417 | 043 | 0407 | 038 | 0408 | 032 | 0409 | 033 | 0409 | 047 | 00054900 |
| 0419 | 014 | 0421 | 040 | 0401 | 017 | 0402 | 016 | 0403 | 011 | 0403 | 006 | 00055000 |
| 0420 | 044 | 0421 | 037 | 0405 | 011 | 0405 | 039 | 0406 | 027 | 0406 | 003 | 00055100 |
| 0427 | 049 | 0421 | 031 | 0407 | 031 | 0407 | 037 | 0403 | 031 | 0403 | 008 | 00055200 |
| 0428 | 015 | 0422 | 033 | 0405 | 031 | 0405 | 017 | 0407 | 004 | 0407 | 013 | 00055300 |
| 0429 | 035 | 0409 | 016 | 0407 | 031 | 0408 | 012 | 0409 | 031 | 0410 | 003 | 00055400 |
| 0410 | 021 | 0411 | 074 | 0411 | 033 | 0412 | 031 | 0412 | 032 | 0413 | 014 | 00055500 |
| 0413 | 031 | 0412 | 031 | 0415 | 015 | 0415 | 031 | 0401 | 040 | 0401 | 034 | 00055600 |
| 0419 | 074 | 0422 | 036 | 0401 | 035 | 0401 | 035 | 0401 | 042 | 0402 | 005 | 00055700 |
| 0420 | 037 | 0422 | 031 | 0403 | 037 | 0403 | 037 | 0404 | 008 | 0404 | 035 | 00055800 |
| 0422 | 034 | 0425 | 037 | 0405 | 024 | 0406 | 036 | 0406 | 034 | 0407 | 006 | 00055900 |
| 0427 | 029 | 0427 | 011 | 0409 | 032 | 0409 | 032 | 0409 | 011 | 0409 | 012 | 00056000 |
| 0429 | 015 | 0429 | 023 | 0410 | 014 | 0411 | 039 | 0411 | 032 | 0412 | 002 | 00056100 |
| 0430 | 037 | 0431 | 032 | 0412 | 032 | 0415 | 034 | 0416 | 034 | 0417 | 001 | 00056200 |
| 0431 | 034 | 0434 | 030 | 0412 | 034 | 0422 | 031 | 0421 | 031 | 0421 | 001 | 00056300 |
| 0432 | 035 | 0423 | 030 | 0402 | 030 | 0402 | 035 | 0403 | 011 | 0403 | 031 | 00056400 |
| 0433 | 037 | 0434 | 043 | 0405 | 011 | 0405 | 034 | 0406 | 032 | 0406 | 002 | 00056500 |
| 0437 | 032 | 0437 | 037 | 0409 | 030 | 0409 | 030 | 0409 | 037 | 0409 | 009 | 00056600 |
| 0438 | 011 | 0438 | 047 | 0410 | 035 | 0411 | 013 | 0411 | 037 | 0412 | 001 | 00056700 |

| | | | | | | | | | | |
|------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1101 | 001 | 1101 | 014 | 1102 | 013 | 1102 | 016 | 1102 | 001 | 00000000 |
| 1102 | 011 | 1103 | 004 | 1104 | 123 | 1104 | 000 | 1105 | 012 | 00000000 |
| 1103 | 000 | 1106 | 002 | 1107 | 016 | 1108 | 001 | 1109 | 005 | 00000000 |
| 1104 | 003 | 1109 | 015 | 1110 | 009 | 1111 | 001 | 1111 | 004 | 00000000 |
| 1112 | 003 | 1112 | 030 | 1113 | 032 | 1113 | 007 | 1114 | 015 | 00000000 |
| 1115 | 001 | 1115 | 000 | 1116 | 021 | 1116 | 001 | 1117 | 000 | 00000000 |
| 00 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 | 00000000 |
| 0101 | 010 | 0101 | 003 | 0102 | 004 | 0102 | 001 | 0103 | 002 | 00000000 |
| 0104 | 013 | 0104 | 003 | 0105 | 002 | 0105 | 001 | 0106 | 005 | 00000000 |
| 0107 | 014 | 0107 | 002 | 0109 | 175 | 0109 | 012 | 0109 | 012 | 00000000 |
| 0110 | 004 | 0110 | 002 | 0111 | 014 | 0111 | 010 | 0112 | 000 | 00000000 |
| 0113 | 000 | 0113 | 007 | 0201 | 004 | 0202 | 012 | 0202 | 007 | 00000000 |
| 0203 | 007 | 0204 | 000 | 0204 | 000 | 0205 | 001 | 0205 | 000 | 00000000 |
| 0206 | 000 | 0207 | 001 | 0208 | 000 | 0208 | 012 | 0209 | 012 | 00000000 |
| 0210 | 000 | 0211 | 000 | 0211 | 132 | 0301 | 013 | 0301 | 000 | 00000000 |
| 0302 | 000 | 0302 | 013 | 0303 | 013 | 0303 | 003 | 0303 | 001 | 00000000 |
| 0304 | 002 | 0305 | 000 | 0306 | 001 | 0307 | 001 | 0308 | 001 | 00000000 |
| 0309 | 003 | 0310 | 002 | 0311 | 013 | 0312 | 002 | 0313 | 013 | 00000000 |
| 0315 | 001 | 0316 | 001 | 0317 | 003 | 0318 | 001 | 0319 | 003 | 00000000 |
| 0321 | 005 | 0322 | 001 | 0323 | 001 | 0324 | 001 | 0325 | 001 | 00000000 |
| 0327 | 013 | 0328 | 002 | 0329 | 005 | 0330 | 013 | 0331 | 012 | 00000000 |
| 0333 | 003 | 0334 | 005 | 0335 | 003 | 0336 | 000 | 0337 | 011 | 00000000 |
| 0339 | 000 | 0339 | 002 | 0339 | 002 | 0340 | 002 | 0341 | 001 | 00000000 |
| 0343 | 000 | 0344 | 001 | 0345 | 000 | 0345 | 000 | 0346 | 000 | 00000000 |
| 0349 | 000 | 0349 | 000 | 0350 | 000 | 0351 | 003 | 0351 | 000 | 00000000 |
| 0401 | 000 | 0402 | 005 | 0402 | 000 | 0403 | 012 | 0403 | 000 | 00000000 |
| 0405 | 007 | 0405 | 016 | 0405 | 002 | 0406 | 000 | 0406 | 010 | 00000000 |
| 0407 | 002 | 0408 | 007 | 0409 | 000 | 0409 | 002 | 0409 | 014 | 00000000 |
| 0410 | 000 | 0411 | 002 | 0412 | 002 | 0412 | 007 | 0413 | 000 | 00000000 |
| 0501 | 012 | 0501 | 000 | 0501 | 005 | 0502 | 007 | 0502 | 016 | 00000000 |
| 0503 | 000 | 0504 | 000 | 0504 | 000 | 0505 | 003 | 0505 | 000 | 00000000 |
| 0506 | 010 | 0507 | 005 | 0507 | 000 | 0508 | 002 | 0508 | 003 | 00000000 |
| 0509 | 010 | 0509 | 000 | 0601 | 017 | 0602 | 000 | 0603 | 011 | 00000000 |
| 0604 | 000 | 0604 | 007 | 0605 | 011 | 0605 | 000 | 0606 | 007 | 00000000 |
| 0607 | 000 | 0701 | 001 | 0702 | 001 | 0702 | 007 | 0703 | 001 | 00000000 |
| 0704 | 015 | 0704 | 003 | 0705 | 001 | 0705 | 017 | 0707 | 005 | 00000000 |
| 0709 | 005 | 0709 | 015 | 0709 | 001 | 0709 | 012 | 0709 | 001 | 00000000 |
| 0710 | 021 | 0711 | 000 | 0711 | 003 | 0712 | 001 | 0712 | 002 | 00000000 |
| 0713 | 001 | 0714 | 001 | 0715 | 015 | 0715 | 001 | 0901 | 000 | 00000000 |
| 0902 | 000 | 0902 | 003 | 0901 | 005 | 0901 | 005 | 0901 | 002 | 00000000 |
| 0902 | 007 | 0902 | 001 | 0903 | 007 | 0903 | 000 | 0904 | 000 | 00000000 |
| 0904 | 004 | 0905 | 007 | 0905 | 000 | 0906 | 000 | 0906 | 000 | 00000000 |
| 0907 | 000 | 0907 | 011 | 0908 | 002 | 0908 | 002 | 0909 | 011 | 00000000 |
| 0909 | 015 | 0910 | 103 | 0910 | 014 | 0911 | 000 | 0911 | 002 | 00000000 |
| 0912 | 007 | 0913 | 002 | 0914 | 002 | 0915 | 000 | 0916 | 000 | 00000000 |
| 0918 | 004 | 0919 | 000 | 0919 | 004 | 0920 | 001 | 0921 | 001 | 00000000 |
| 0922 | 005 | 0923 | 002 | 1002 | 000 | 1002 | 003 | 1003 | 011 | 00000000 |
| 1004 | 007 | 1004 | 000 | 1005 | 011 | 1005 | 104 | 1006 | 002 | 00000000 |
| 1007 | 002 | 1007 | 007 | 1008 | 000 | 1009 | 000 | 1009 | 007 | 00000000 |
| 1010 | 011 | 1010 | 007 | 1010 | 005 | 1011 | 013 | 1011 | 000 | 00000000 |
| 1012 | 005 | 1101 | 011 | 1101 | 014 | 1102 | 013 | 1102 | 016 | 00000000 |

| | | | | | | | | | | | | |
|------|---|------|-----|------|-----|------|-----|------|-----|------|-----|----------|
| 1105 | 011 | 1103 | 045 | 1103 | 030 | 1104 | 125 | 1104 | 040 | 1105 | 012 | 07041900 |
| 1105 | 039 | 1106 | 002 | 1107 | 016 | 1107 | 046 | 1109 | 001 | 1108 | 005 | 07042000 |
| 1109 | 033 | 1109 | 015 | 1110 | 030 | 1110 | 041 | 1111 | 001 | 1111 | 004 | 07042100 |
| 1112 | 033 | 1112 | 030 | 1113 | 032 | 1113 | 037 | 1114 | 015 | 1114 | 001 | 07042200 |
| 1115 | 001 | 1115 | 009 | 1116 | 021 | 1116 | 031 | 1117 | 000 | | | 07042300 |
| 33 | JUNCTON 446. L293 233 ARCA 45 3377/4 JJING AIRCUE | | | | | | | | | | | 07042400 |
| 0101 | 000 | 0101 | 000 | 0102 | 030 | 0102 | 030 | 0103 | 067 | 0103 | 000 | 07042500 |
| 0104 | 000 | 0104 | 000 | 0105 | 030 | 0105 | 030 | 0106 | 333 | 0106 | 000 | 07042600 |
| 0107 | 030 | 0107 | 000 | 0109 | 030 | 0109 | 030 | 0109 | 000 | 0109 | 000 | 07042700 |
| 0110 | 000 | 0110 | 000 | 0111 | 030 | 0111 | 030 | 0112 | 000 | 0112 | 000 | 07042800 |
| 0113 | 000 | 0113 | 000 | 0201 | 030 | 0202 | 030 | 0202 | 000 | 0203 | 000 | 07042900 |
| 0203 | 000 | 0204 | 000 | 0204 | 030 | 0205 | 030 | 0205 | 000 | 0206 | 000 | 07043000 |
| 0206 | 030 | 0207 | 000 | 0209 | 030 | 0208 | 030 | 0209 | 000 | 0209 | 000 | 07043100 |
| 0210 | 000 | 0211 | 000 | 0211 | 030 | 0301 | 130 | 0301 | 000 | 0302 | 000 | 07043200 |
| 0302 | 030 | 0302 | 000 | 0303 | 030 | 0303 | 030 | 0303 | 000 | 0304 | 067 | 07043300 |
| 0304 | 000 | 0305 | 000 | 0306 | 030 | 0307 | 000 | 0308 | 000 | 0308 | 000 | 07043400 |
| 0309 | 030 | 0310 | 030 | 0311 | 030 | 0312 | 030 | 0313 | 000 | 0314 | 000 | 07043500 |
| 0315 | 000 | 0316 | 000 | 0317 | 030 | 0319 | 030 | 0319 | 000 | 0320 | 000 | 07043600 |
| 0321 | 030 | 0322 | 000 | 0323 | 030 | 0324 | 030 | 0325 | 000 | 0326 | 000 | 07043700 |
| 0327 | 000 | 0328 | 000 | 0329 | 000 | 0330 | 030 | 0331 | 000 | 0332 | 000 | 07043800 |
| 0333 | 000 | 0334 | 000 | 0335 | 030 | 0336 | 030 | 0337 | 000 | 0337 | 000 | 07043900 |
| 0338 | 030 | 0339 | 000 | 0339 | 030 | 0340 | 030 | 0341 | 000 | 0342 | 000 | 07044000 |
| 0343 | 000 | 0344 | 000 | 0345 | 030 | 0345 | 030 | 0346 | 000 | 0347 | 000 | 07044100 |
| 0348 | 030 | 0349 | 000 | 0350 | 030 | 0351 | 030 | 0351 | 000 | 0401 | 000 | 07044200 |
| 0401 | 030 | 0402 | 030 | 0402 | 000 | 0403 | 030 | 0403 | 000 | 0404 | 000 | 07044300 |
| 0405 | 030 | 0405 | 000 | 0405 | 000 | 0406 | 030 | 0406 | 030 | 0407 | 000 | 07044400 |
| 0407 | 000 | 0409 | 030 | 0408 | 030 | 0409 | 030 | 0409 | 000 | 0410 | 000 | 07044500 |
| 0410 | 000 | 0411 | 030 | 0412 | 030 | 0412 | 030 | 0413 | 000 | 0413 | 000 | 07044600 |
| 0501 | 000 | 0501 | 000 | 0501 | 030 | 0502 | 030 | 0502 | 000 | 0503 | 000 | 07044700 |
| 0503 | 000 | 0504 | 000 | 0504 | 030 | 0505 | 030 | 0505 | 000 | 0506 | 000 | 07044800 |
| 0506 | 000 | 0507 | 000 | 0507 | 030 | 0508 | 030 | 0508 | 000 | 0509 | 000 | 07044900 |
| 0509 | 000 | 0601 | 000 | 0601 | 030 | 0602 | 000 | 0603 | 000 | 0603 | 000 | 07045000 |
| 0604 | 030 | 0604 | 000 | 0605 | 030 | 0605 | 030 | 0606 | 000 | 0606 | 000 | 07045100 |
| 0607 | 030 | 0701 | 000 | 0702 | 030 | 0702 | 030 | 0703 | 000 | 0703 | 000 | 07045200 |
| 0704 | 000 | 0704 | 000 | 0705 | 030 | 0705 | 030 | 0707 | 000 | 0707 | 000 | 07045300 |
| 0708 | 030 | 0708 | 000 | 0709 | 030 | 0709 | 030 | 0709 | 000 | 0710 | 000 | 07045400 |
| 0710 | 000 | 0711 | 000 | 0711 | 030 | 0712 | 030 | 0712 | 000 | 0713 | 000 | 07045500 |
| 0713 | 000 | 0714 | 000 | 0715 | 030 | 0715 | 000 | 0801 | 000 | 0801 | 000 | 07045600 |
| 0802 | 000 | 0802 | 000 | 0801 | 579 | 0801 | 030 | 0801 | 000 | 0802 | 211 | 07045700 |
| 0802 | 000 | 0802 | 000 | 0803 | 135 | 0803 | 030 | 0804 | 135 | 0804 | 000 | 07045800 |
| 0804 | 030 | 0805 | 000 | 0805 | 030 | 0806 | 030 | 0806 | 000 | 0807 | 000 | 07045900 |
| 0807 | 000 | 0807 | 000 | 0808 | 030 | 0808 | 030 | 0809 | 000 | 0809 | 000 | 07046000 |
| 0809 | 030 | 0810 | 000 | 0810 | 030 | 0811 | 030 | 0811 | 000 | 0812 | 000 | 07046100 |
| 0812 | 000 | 0813 | 000 | 0814 | 030 | 0815 | 030 | 0816 | 000 | 0817 | 000 | 07046200 |
| 0818 | 000 | 0818 | 000 | 0819 | 030 | 0820 | 030 | 0821 | 000 | 0821 | 000 | 07046300 |
| 0822 | 030 | 0823 | 000 | 1002 | 030 | 1002 | 030 | 1003 | 000 | 1003 | 000 | 07046400 |
| 1004 | 030 | 1004 | 000 | 1005 | 230 | 1005 | 030 | 1006 | 000 | 1006 | 000 | 07046500 |
| 1007 | 030 | 1007 | 000 | 1008 | 030 | 1008 | 030 | 1009 | 000 | 1009 | 000 | 07046600 |
| 1010 | 030 | 1010 | 000 | 1010 | 030 | 1011 | 030 | 1011 | 000 | 1012 | 000 | 07046700 |
| 1012 | 000 | 1101 | 000 | 1101 | 030 | 1102 | 319 | 1102 | 000 | 1102 | 000 | 07046800 |
| 1103 | 063 | 1103 | 000 | 1103 | 030 | 1104 | 030 | 1104 | 000 | 1105 | 000 | 07046900 |

20) Function tables 32, 33, 34, 35 and 37. For each of these functions, the function table definition card for HLH and CH-47 models P22 has been replaced by FN46. That is, whenever these function tables are addressed, function 46 will be used to indicate which element of the function table is to be selected. As previously defined, parameter 22 was used to identify the element that was to be selected. Also on the function definition card, these function tables have been modified from discrete function tables with a D identifier to list-type functions with an L identifier for the number of discrete points in the function table. Due to the occurrence in the CH-47C model of multiple maintenance actions on the same element number, it was necessary to modify these tables to list-type functions. Discrete function tables do not provide the analyst with the ability to keep the same functional X value for the table for various points within the function tables. That is, for discrete function tables, the X value must be monotonic increasing. It was desirable to provide the analyst with a method of keeping all the various elemental values of these function tables compatible with the work breakdown structure or element identification number system employed. These tables have been modified to list-type tables. It should be noted here, however, that in the situation where list function tables are employed, the X value of the function table is not even analyzed by the computer. Rather, it merely assumes that the Y values of the function table are related to numbers running from 1 to the total number of discrete data points for the function table as defined on the function table specification card. Function table 46, which defines the element number in terms of a number running from 1 to the discrete number of data points in the model as a function of the inputted element numbers, is significant to the proper actuation of the model. These element numbers are dummies when a model has more than one task per element number. They have been biased to conform to requirements of a discrete function table that the element numbers be monotonic increasing. However, it is felt that this bias, which is merely a manipulative problem and has nothing to do with the proper functioning of the model, in no way distorts the results of the model and, furthermore, allows the analyst to properly code his element numbers with respect to all the R&M data for all other function tables of the model.

| | | | | | | | | | | | | |
|------|-----|------|-----|------|-----|------|-----|------|-----|------|-----|----------|
| 1135 | 000 | 1136 | 000 | 1107 | 132 | 1107 | 000 | 1109 | 013 | 1109 | 000 | 00067000 |
| 1139 | 152 | 1139 | 000 | 1110 | 076 | 1110 | 000 | 1111 | 025 | 1111 | 000 | 00067100 |
| 1112 | 000 | 1112 | 000 | 1113 | 000 | 1113 | 000 | 1114 | 000 | 1114 | 000 | 00067200 |
| 1115 | 000 | 1115 | 000 | 1116 | 000 | 1116 | 000 | 1117 | 000 | | | 00067300 |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 30 | 0131 | 0132 | 0133 | 0134 | 0135 | 0136 | 0137 | 0138 | 0139 | 0140 | 0141 | 0142 | 0143 | 0144 | 0145 | 0146 | 0147 | 0148 | 0149 | 0150 | 0151 | 0152 | 0153 | 0154 | 0155 | 0156 | 0157 | 0158 | 0159 | 0160 | 0161 | 0162 | 0163 | 0164 | 0165 | 0166 | 0167 | 0168 | 0169 | 0170 | 0171 | 0172 | 0173 | 0174 | 0175 | 0176 | 0177 | 0178 | 0179 | 0180 | 0181 | 0182 | 0183 | 0184 | 0185 | 0186 | 0187 | 0188 | 0189 | 0190 | 0191 | 0192 | 0193 | 0194 | 0195 | 0196 | 0197 | 0198 | 0199 | 0200 | 0201 | 0202 | 0203 | 0204 | 0205 | 0206 | 0207 | 0208 | 0209 | 0210 | 0211 | 0212 | 0213 | 0214 | 0215 | 0216 | 0217 | 0218 | 0219 | 0220 | 0221 | 0222 | 0223 | 0224 | 0225 | 0226 | 0227 | 0228 | 0229 | 0230 | 0231 | 0232 | 0233 | 0234 | 0235 | 0236 | 0237 | 0238 | 0239 | 0240 | 0241 | 0242 | 0243 | 0244 | 0245 | 0246 | 0247 | 0248 | 0249 | 0250 | 0251 | 0252 | 0253 | 0254 | 0255 | 0256 | 0257 | 0258 | 0259 | 0260 | 0261 | 0262 | 0263 | 0264 | 0265 | 0266 | 0267 | 0268 | 0269 | 0270 | 0271 | 0272 | 0273 | 0274 | 0275 | 0276 | 0277 | 0278 | 0279 | 0280 | 0281 | 0282 | 0283 | 0284 | 0285 | 0286 | 0287 | 0288 | 0289 | 0290 | 0291 | 0292 | 0293 | 0294 | 0295 | 0296 | 0297 | 0298 | 0299 | 0300 | 0301 | 0302 | 0303 | 0304 | 0305 | 0306 | 0307 | 0308 | 0309 | 0310 | 0311 | 0312 | 0313 | 0314 | 0315 | 0316 | 0317 | 0318 | 0319 | 0320 | 0321 | 0322 | 0323 | 0324 | 0325 | 0326 | 0327 | 0328 | 0329 | 0330 | 0331 | 0332 | 0333 | 0334 | 0335 | 0336 | 0337 | 0338 | 0339 | 0340 | 0341 | 0342 | 0343 | 0344 | 0345 | 0346 | 0347 | 0348 | 0349 | 0350 | 0351 | 0352 | 0353 | 0354 | 0355 | 0356 | 0357 | 0358 | 0359 | 0360 | 0361 | 0362 | 0363 | 0364 | 0365 | 0366 | 0367 | 0368 | 0369 | 0370 | 0371 | 0372 | 0373 | 0374 | 0375 | 0376 | 0377 | 0378 | 0379 | 0380 | 0381 | 0382 | 0383 | 0384 | 0385 | 0386 | 0387 | 0388 | 0389 | 0390 | 0391 | 0392 | 0393 | 0394 | 0395 | 0396 | 0397 | 0398 | 0399 | 0400 | 0401 | 0402 | 0403 | 0404 | 0405 | 0406 | 0407 | 0408 | 0409 | 0410 | 0411 | 0412 | 0413 | 0414 | 0415 | 0416 | 0417 | 0418 | 0419 | 0420 | 0421 | 0422 | 0423 | 0424 | 0425 | 0426 | 0427 | 0428 | 0429 | 0430 | 0431 | 0432 | 0433 | 0434 | 0435 | 0436 | 0437 | 0438 | 0439 | 0440 | 0441 | 0442 | 0443 | 0444 | 0445 | 0446 | 0447 | 0448 | 0449 | 0450 | 0451 | 0452 | 0453 | 0454 | 0455 | 0456 | 0457 | 0458 | 0459 | 0460 | 0461 | 0462 | 0463 | 0464 | 0465 | 0466 | 0467 | 0468 | 0469 | 0470 | 0471 | 0472 | 0473 | 0474 | 0475 | 0476 | 0477 | 0478 | 0479 | 0480 | 0481 | 0482 | 0483 | 0484 | 0485 | 0486 | 0487 | 0488 | 0489 | 0490 | 0491 | 0492 | 0493 | 0494 | 0495 | 0496 | 0497 | 0498 | 0499 | 0500 | 0501 | 0502 | 0503 | 0504 | 0505 | 0506 | 0507 | 0508 | 0509 | 0510 | 0511 | 0512 | 0513 | 0514 | 0515 | 0516 | 0517 | 0518 | 0519 | 0520 | 0521 | 0522 | 0523 | 0524 | 0525 | 0526 | 0527 | 0528 | 0529 | 0530 | 0531 | 0532 | 0533 | 0534 | 0535 | 0536 | 0537 | 0538 | 0539 | 0540 | 0541 | 0542 | 0543 | 0544 | 0545 | 0546 | 0547 | 0548 | 0549 | 0550 | 0551 | 0552 | 0553 | 0554 | 0555 | 0556 | 0557 | 0558 | 0559 | 0560 | 0561 | 0562 | 0563 | 0564 | 0565 | 0566 | 0567 | 0568 | 0569 | 0570 | 0571 | 0572 | 0573 | 0574 | 0575 | 0576 | 0577 | 0578 | 0579 | 0580 | 0581 | 0582 | 0583 | 0584 | 0585 | 0586 | 0587 | 0588 | 0589 | 0590 | 0591 | 0592 | 0593 | 0594 | 0595 | 0596 | 0597 | 0598 | 0599 | 0600 | 0601 | 0602 | 0603 | 0604 | 0605 | 0606 | 0607 | 0608 | 0609 | 0610 | 0611 | 0612 | 0613 | 0614 | 0615 | 0616 | 0617 | 0618 | 0619 | 0620 | 0621 | 0622 | 0623 | 0624 | 0625 | 0626 | 0627 | 0628 | 0629 | 0630 | 0631 | 0632 | 0633 | 0634 | 0635 | 0636 | 0637 | 0638 | 0639 | 0640 | 0641 | 0642 | 0643 | 0644 | 0645 | 0646 | 0647 | 0648 | 0649 | 0650 | 0651 | 0652 | 0653 | 0654 | 0655 | 0656 | 0657 | 0658 | 0659 | 0660 | 0661 | 0662 | 0663 | 0664 | 0665 | 0666 | 0667 | 0668 | 0669 | 0670 | 0671 | 0672 | 0673 | 0674 | 0675 | 0676 | 0677 | 0678 | 0679 | 0680 | 0681 | 0682 | 0683 | 0684 | 0685 | 0686 | 0687 | 0688 | 0689 | 0690 | 0691 | 0692 | 0693 | 0694 | 0695 | 0696 | 0697 | 0698 | 0699 | 0700 | 0701 | 0702 | 0703 | 0704 | 0705 | 0706 | 0707 | 0708 | 0709 | 0710 | 0711 | 0712 | 0713 | 0714 | 0715 | 0716 | 0717 | 0718 | 0719 | 0720 | 0721 | 0722 | 0723 | 0724 | 0725 | 0726 | 0727 | 0728 | 0729 | 0730 | 0731 | 0732 | 0733 | 0734 | 0735 | 0736 | 0737 | 0738 | 0739 | 0740 | 0741 | 0742 | 0743 | 0744 | 0745 | 0746 | 0747 | 0748 | 0749 | 0750 | 0751 | 0752 | 0753 | 0754 | 0755 | 0756 | 0757 | 0758 | 0759 | 0760 | 0761 | 0762 | 0763 | 0764 | 0765 | 0766 | 0767 | 0768 | 0769 | 0770 | 0771 | 0772 | 0773 | 0774 | 0775 | 0776 | 0777 | 0778 | 0779 | 0780 | 0781 | 0782 | 0783 | 0784 | 0785 | 0786 | 0787 | 0788 | 0789 | 0790 | 0791 | 0792 | 0793 | 0794 | 0795 | 0796 | 0797 | 0798 | 0799 | 0800 | 0801 | 0802 | 0803 | 0804 | 0805 | 0806 | 0807 | 0808 | 0809 | 0810 | 0811 | 0812 | 0813 | 0814 | 0815 | 0816 | 0817 | 0818 | 0819 | 0820 | 0821 | 0822 | 0823 | 0824 | 0825 | 0826 | 0827 | 0828 | 0829 | 0830 | 0831 | 0832 | 0833 | 0834 | 0835 | 0836 | 0837 | 0838 | 0839 | 0840 | 0841 | 0842 | 0843 | 0844 | 0845 | 0846 | 0847 | 0848 | 0849 | 0850 | 0851 | 0852 | 0853 | 0854 | 0855 | 0856 | 0857 | 0858 | 0859 | 0860 | 0861 | 0862 | 0863 | 0864 | 0865 | 0866 | 0867 | 0868 | 0869 | 0870 | 0871 | 0872 | 0873 | 0874 | 0875 | 0876 | 0877 | 0878 | 0879 | 0880 | 0881 | 0882 | 0883 | 0884 | 0885 | 0886 | 0887 | 0888 | 0889 | 0890 | 0891 | 0892 | 0893 | 0894 | 0895 | 0896 | 0897 | 0898 | 0899 | 0900 | 0901 | 0902 | 0903 | 0904 | 0905 | 0906 | 0907 | 0908 | 0909 | 0910 | 0911 | 0912 | 0913 | 0914 | 0915 | 0916 | 0917 | 0918 | 0919 | 0920 | 0921 | 0922 | 0923 | 0924 | 0925 | 0926 | 0927 | 0928 | 0929 | 0930 | 0931 | 0932 | 0933 | 0934 | 0935 | 0936 | 0937 | 0938 | 0939 | 0940 | 0941 | 0942 | 0943 | 0944 | 0945 | 0946 | 0947 | 0948 | 0949 | 0950 | 0951 | 0952 | 0953 | 0954 | 0955 | 0956 | 0957 | 0958 | 0959 | 0960 | 0961 | 0962 | 0963 | 0964 | 0965 | 0966 | 0967 | 0968 | 0969 | 0970 | 0971 | 0972 | 0973 | 0974 | 0975 | 0976 | 0977 | 0978 | 0979 | 0980 | 0981 | 0982 | 0983 | 0984 | 0985 | 0986 | 0987 | 0988 | 0989 | 0990 | 0991 | 0992 | 0993 | 0994 | 0995 | 0996 | 0997 | 0998 | 0999 | 1000 |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|

30 Function table 33 has been modified to a list-type function table.

30 Function table 34 has been modified to a list-type function table.

30 Function table 35 has been modified to a list-type function table.

163

[illegible]

| | | | | | | |
|------|------------|------------|------------|------------|------------|------------|
| 0012 | 0000070913 | 0000070914 | 0000070915 | 0000070916 | 0000070917 | 0000070918 |
| 0014 | 0000070919 | 0000070920 | 0000070921 | 0000070922 | 0000070923 | 0000070924 |
| 0022 | 0000070925 | 0000070926 | 0000070927 | 0000070928 | 0000070929 | 0000070930 |
| 1010 | 0000070931 | 0000070932 | 0000070933 | 0000070934 | 0000070935 | 0000070936 |
| 1012 | 0000070937 | 0000070938 | 0000070939 | 0000070940 | 0000070941 | 0000070942 |
| 1013 | 0000070943 | 0000070944 | 0000070945 | 0000070946 | 0000070947 | 0000070948 |
| 1014 | 0000070949 | 0000070950 | 0000070951 | 0000070952 | 0000070953 | 0000070954 |
| 1015 | 0000070955 | 0000070956 | 0000070957 | 0000070958 | 0000070959 | 0000070960 |
| 1016 | 0000070961 | 0000070962 | 0000070963 | 0000070964 | 0000070965 | 0000070966 |
| 1017 | 0000070967 | 0000070968 | 0000070969 | 0000070970 | 0000070971 | 0000070972 |
| 1018 | 0000070973 | 0000070974 | 0000070975 | 0000070976 | 0000070977 | 0000070978 |
| 1019 | 0000070979 | 0000070980 | 0000070981 | 0000070982 | 0000070983 | 0000070984 |
| 1020 | 0000070985 | 0000070986 | 0000070987 | 0000070988 | 0000070989 | 0000070990 |
| 1021 | 0000070991 | 0000070992 | 0000070993 | 0000070994 | 0000070995 | 0000070996 |
| 1022 | 0000070997 | 0000070998 | 0000070999 | 0000071000 | 0000071001 | 0000071002 |
| 1023 | 0000071003 | 0000071004 | 0000071005 | 0000071006 | 0000071007 | 0000071008 |
| 1024 | 0000071009 | 0000071010 | 0000071011 | 0000071012 | 0000071013 | 0000071014 |
| 1025 | 0000071015 | 0000071016 | 0000071017 | 0000071018 | 0000071019 | 0000071020 |
| 1026 | 0000071021 | 0000071022 | 0000071023 | 0000071024 | 0000071025 | 0000071026 |
| 1027 | 0000071027 | 0000071028 | 0000071029 | 0000071030 | 0000071031 | 0000071032 |
| 1028 | 0000071033 | 0000071034 | 0000071035 | 0000071036 | 0000071037 | 0000071038 |
| 1029 | 0000071039 | 0000071040 | 0000071041 | 0000071042 | 0000071043 | 0000071044 |
| 1030 | 0000071045 | 0000071046 | 0000071047 | 0000071048 | 0000071049 | 0000071050 |
| 1031 | 0000071051 | 0000071052 | 0000071053 | 0000071054 | 0000071055 | 0000071056 |
| 1032 | 0000071057 | 0000071058 | 0000071059 | 0000071060 | 0000071061 | 0000071062 |
| 1033 | 0000071063 | 0000071064 | 0000071065 | 0000071066 | 0000071067 | 0000071068 |
| 1034 | 0000071069 | 0000071070 | 0000071071 | 0000071072 | 0000071073 | 0000071074 |
| 1035 | 0000071075 | 0000071076 | 0000071077 | 0000071078 | 0000071079 | 0000071080 |
| 1036 | 0000071081 | 0000071082 | 0000071083 | 0000071084 | 0000071085 | 0000071086 |
| 1037 | 0000071087 | 0000071088 | 0000071089 | 0000071090 | 0000071091 | 0000071092 |
| 1038 | 0000071093 | 0000071094 | 0000071095 | 0000071096 | 0000071097 | 0000071098 |
| 1039 | 0000071099 | 0000071100 | 0000071101 | 0000071102 | 0000071103 | 0000071104 |
| 1040 | 0000071105 | 0000071106 | 0000071107 | 0000071108 | 0000071109 | 0000071110 |
| 1041 | 0000071111 | 0000071112 | 0000071113 | 0000071114 | 0000071115 | 0000071116 |
| 1042 | 0000071117 | 0000071118 | 0000071119 | 0000071120 | 0000071121 | 0000071122 |
| 1043 | 0000071123 | 0000071124 | 0000071125 | 0000071126 | 0000071127 | 0000071128 |
| 1044 | 0000071129 | 0000071130 | 0000071131 | 0000071132 | 0000071133 | 0000071134 |
| 1045 | 0000071135 | 0000071136 | 0000071137 | 0000071138 | 0000071139 | 0000071140 |
| 1046 | 0000071141 | 0000071142 | 0000071143 | 0000071144 | 0000071145 | 0000071146 |
| 1047 | 0000071147 | 0000071148 | 0000071149 | 0000071150 | 0000071151 | 0000071152 |
| 1048 | 0000071153 | 0000071154 | 0000071155 | 0000071156 | 0000071157 | 0000071158 |
| 1049 | 0000071159 | 0000071160 | 0000071161 | 0000071162 | 0000071163 | 0000071164 |
| 1050 | 0000071165 | 0000071166 | 0000071167 | 0000071168 | 0000071169 | 0000071170 |
| 1051 | 0000071171 | 0000071172 | 0000071173 | 0000071174 | 0000071175 | 0000071176 |
| 1052 | 0000071177 | 0000071178 | 0000071179 | 0000071180 | 0000071181 | 0000071182 |
| 1053 | 0000071183 | 0000071184 | 0000071185 | 0000071186 | 0000071187 | 0000071188 |
| 1054 | 0000071189 | 0000071190 | 0000071191 | 0000071192 | 0000071193 | 0000071194 |
| 1055 | 0000071195 | 0000071196 | 0000071197 | 0000071198 | 0000071199 | 0000071200 |
| 1056 | 0000071201 | 0000071202 | 0000071203 | 0000071204 | 0000071205 | 0000071206 |
| 1057 | 0000071207 | 0000071208 | 0000071209 | 0000071210 | 0000071211 | 0000071212 |
| 1058 | 0000071213 | 0000071214 | 0000071215 | 0000071216 | 0000071217 | 0000071218 |
| 1059 | 0000071219 | 0000071220 | 0000071221 | 0000071222 | 0000071223 | 0000071224 |
| 1060 | 0000071225 | 0000071226 | 0000071227 | 0000071228 | 0000071229 | 0000071230 |
| 1061 | 0000071231 | 0000071232 | 0000071233 | 0000071234 | 0000071235 | 0000071236 |
| 1062 | 0000071237 | 0000071238 | 0000071239 | 0000071240 | 0000071241 | 0000071242 |
| 1063 | 0000071243 | 0000071244 | 0000071245 | 0000071246 | 0000071247 | 0000071248 |
| 1064 | 0000071249 | 0000071250 | 0000071251 | 0000071252 | 0000071253 | 0000071254 |
| 1065 | 0000071255 | 0000071256 | 0000071257 | 0000071258 | 0000071259 | 0000071260 |
| 1066 | 0000071261 | 0000071262 | 0000071263 | 0000071264 | 0000071265 | 0000071266 |
| 1067 | 0000071267 | 0000071268 | 0000071269 | 0000071270 | 0000071271 | 0000071272 |
| 1068 | 0000071273 | 0000071274 | 0000071275 | 0000071276 | 0000071277 | 0000071278 |
| 1069 | 0000071279 | 0000071280 | 0000071281 | 0000071282 | 0000071283 | 0000071284 |
| 1070 | 0000071285 | 0000071286 | 0000071287 | 0000071288 | 0000071289 | 0000071290 |
| 1071 | 0000071291 | 0000071292 | 0000071293 | 0000071294 | 0000071295 | 0000071296 |
| 1072 | 0000071297 | 0000071298 | 0000071299 | 0000071300 | 0000071301 | 0000071302 |
| 1073 | 0000071303 | 0000071304 | 0000071305 | 0000071306 | 0000071307 | 0000071308 |
| 1074 | 0000071309 | 0000071310 | 0000071311 | 0000071312 | 0000071313 | 0000071314 |
| 1075 | 0000071315 | 0000071316 | 0000071317 | 0000071318 | 0000071319 | 0000071320 |
| 1076 | 0000071321 | 0000071322 | 0000071323 | 0000071324 | 0000071325 | 0000071326 |
| 1077 | 0000071327 | 0000071328 | 0000071329 | 0000071330 | 0000071331 | 0000071332 |
| 1078 | 0000071333 | 0000071334 | 0000071335 | 0000071336 | 0000071337 | 0000071338 |
| 1079 | 0000071339 | 0000071340 | 0000071341 | 0000071342 | 0000071343 | 0000071344 |
| 1080 | 0000071345 | 0000071346 | 0000071347 | 0000071348 | 0000071349 | 0000071350 |
| 1081 | 0000071351 | 0000071352 | 0000071353 | 0000071354 | 0000071355 | 0000071356 |
| 1082 | 0000071357 | 0000071358 | 0000071359 | 0000071360 | 0000071361 | 0000071362 |
| 1083 | 0000071363 | 0000071364 | 0000071365 | 0000071366 | 0000071367 | 0000071368 |
| 1084 | 0000071369 | 0000071370 | 0000071371 | 0000071372 | 0000071373 | 0000071374 |
| 1085 | 0000071375 | 0000071376 | 0000071377 | 0000071378 | 0000071379 | 0000071380 |
| 1086 | 0000071381 | 0000071382 | 0000071383 | 0000071384 | 0000071385 | 0000071386 |
| 1087 | 0000071387 | 0000071388 | 0000071389 | 0000071390 | 0000071391 | 0000071392 |
| 1088 | 0000071393 | 0000071394 | 0000071395 | 0000071396 | 0000071397 | 0000071398 |
| 1089 | 0000071399 | 0000071400 | 0000071401 | 0000071402 | 0000071403 | 0000071404 |
| 1090 | 0000071405 | 0000071406 | 0000071407 | 0000071408 | 0000071409 | 0000071410 |
| 1091 | 0000071411 | 0000071412 | 0000071413 | 0000071414 | 0000071415 | 0000071416 |
| 1092 | 0000071417 | 0000071418 | 0000071419 | 0000071420 | 0000071421 | 0000071422 |
| 1093 | 0000071423 | 0000071424 | 0000071425 | 0000071426 | 0000071427 | 0000071428 |
| 1094 | 0000071429 | 0000071430 | 0000071431 | 0000071432 | 0000071433 | 0000071434 |
| 1095 | 0000071435 | 0000071436 | 0000071437 | 0000071438 | 0000071439 | 0000071440 |
| 1096 | 0000071441 | 0000071442 | 0000071443 | 0000071444 | 0000071445 | 0000071446 |
| 1097 | 0000071447 | 0000071448 | 0000071449 | 0000071450 | 0000071451 | 0000071452 |
| 1098 | 0000071453 | 0000071454 | 0000071455 | 0000071456 | 0000071457 | 0000071458 |
| 1099 | 0000071459 | 0000071460 | 0000071461 | 0000071462 | 0000071463 | 0000071464 |
| 1100 | 0000071465 | 0000071466 | 0000071467 | 0000071468 | 0000071469 | 0000071470 |
| 1101 | 0000071471 | 0000071472 | 0000071473 | 0000071474 | 0000071475 | 0000071476 |
| 1102 | 0000071477 | 0000071478 | 0000071479 | 0000071480 | 0000071481 | 0000071482 |
| 1103 | 0000071483 | 0000071484 | 0000071485 | 0000071486 | 0000071487 | 0000071488 |
| 1104 | 0000071489 | 0000071490 | 0000071491 | 0000071492 | 0000071493 | 0000071494 |
| 1105 | 0000071495 | 0000071496 | 0000071497 | 0000071498 | 0000071499 | 0000071500 |
| 1106 | 0000071501 | 0000071502 | 0000071503 | 0000071504 | 0000071505 | 0000071506 |
| 1107 | 0000071507 | 0000071508 | 0000071509 | 0000071510 | 0000071511 | 0000071512 |
| 1108 | 0000071513 | 0000071514 | 0000071515 | 0000071516 | 0000071517 | 0000071518 |
| 1109 | 0000071519 | 0000071520 | 0000071521 | 0000071522 | 0000071523 | 0000071524 |
| 1110 | 0000071525 | 0000071526 | 0000071527 | 0000071528 | 0000071529 | 0000071530 |
| 1111 | 0000071531 | 0000071532 | 0000071533 | 0000071534 | 0000071535 | 0000071536 |
| 1112 | 0000071537 | 0000071538 | 0000071539 | 0000071540 | 0000071541 | 0000071542 |
| 1113 | 0000071543 | 0000071544 | 0000071545 | 0000071546 | 0000071547 | 0000071548 |
| 1114 | 0000071549 | 0000071550 | 0000071551 | 0000071552 | 0000071553 | 0000071554 |
| 1115 | 0000071555 | 0000071556 | 0000071557 | 0000071558 | 0000071559 | 0000071560 |
| 1116 | 0000071561 | 0000071562 | 0000071563 | 0000071564 | 0000071565 | 0000071566 |
| 1117 | 0000071567 | 0000071568 | 0000071569 | 0000071570 | 0000071571 | 0000071572 |
| 1118 | 0000071573 | 0000071574 | 0000071575 | 0000071576 | 0000071577 | 0000071578 |
| 1119 | 0000071579 | 0000071580 | 0000071581 | 0000071582 | 0000071583 | 0000071584 |
| 1120 | 0000071585 | 0000071586 | 0000071587 | 0000071588 | 0000071589 | 0000071590 |
| 1121 | 0000071591 | 0000071592 | 0000071593 | 0000071594 | 0000071595 | 0000071596 |
| 1122 | 0000071597 | 0000071598 | 0000071599 | 0000071600 | 0000071601 | 0000071602 |
| 1123 | 0000071603 | 0000071604 | 0000071605 | 0000071606 | 0000071607 | 0000071608 |
| 1124 | 0000071609 | 0000071610 | 0000071611 | 0000071612 | 0000071613 | 0000071614 |
| 1125 | 0000071615 | 0000071616 | 0000071617 | 0000071618 | 0000071619 | 0000071620 |
| 1126 | 0000071621 | 0000071622 | 0000071623 | 0000071624 | 0000071625 | |

| | | | | | | | | | | | | |
|------|---|----------|------|-----------|---|------|---|------|------|------|---|----------|
| 0030 | 1 | 0010 | 3 | 0010 | 1 | 0011 | 3 | 0011 | 1 | 0012 | 0 | 01113000 |
| 0012 | 1 | 0013 | 0 | 0014 | 0 | 0015 | 1 | 0016 | 1 | 0017 | 0 | 01113100 |
| 0014 | 0 | 0010 | 1 | 0010 | 1 | 0020 | 0 | 0021 | 0 | 0021 | 1 | 01113200 |
| 0022 | 1 | 0023 | 0 | 1002 | 0 | 1002 | 0 | 1003 | 0 | 1003 | 0 | 01113300 |
| 1034 | 0 | 1004 | 0 | 1005 | 3 | 1005 | 0 | 1006 | 0 | 1006 | 0 | 01113400 |
| 1037 | 0 | 1007 | 0 | 1004 | 0 | 1008 | 3 | 1009 | 0 | 1009 | 0 | 01113500 |
| 1010 | 0 | 1010 | 0 | 1010 | 0 | 1011 | 3 | 1011 | 0 | 1012 | 0 | 01113600 |
| 1012 | 0 | 1101 | 0 | 1101 | 0 | 1102 | 0 | 1102 | 1 | 1102 | 1 | 01113700 |
| 1133 | 0 | 1103 | 1 | 1103 | 1 | 1104 | 3 | 1104 | 0 | 1105 | 0 | 01113800 |
| 1135 | 3 | 1106 | 0 | 1107 | 3 | 1107 | 0 | 1109 | 0 | 1109 | 0 | 01113900 |
| 1130 | 0 | 1130 | 3 | 1110 | 0 | 1110 | 0 | 1111 | 0 | 1111 | 0 | 01114000 |
| 1112 | 3 | 1112 | 0 | 1113 | 0 | 1113 | 1 | 1114 | 3 | 1114 | 1 | 01114100 |
| 1115 | 3 | 1115 | 1 | 1116 | 3 | 1116 | 1 | 1117 | 1 | | | 01114200 |
| | | | | | | | | | | | | 01114300 |
| | | | | | | | | | | | | 01114400 |
| | | | | | | | | | | | | 01114500 |
| 03 | | PJVC7134 | | PV46.L293 | | | | | | | | 01114600 |
| 0131 | 0 | 0101 | 0 | 0102 | 0 | 0102 | 0 | 0103 | 0 | 0103 | 0 | 01114700 |
| 0134 | 3 | 0104 | 3 | 0105 | 3 | 0105 | 3 | 0104 | 720 | 0104 | 0 | 01114800 |
| 0137 | 3 | 0107 | 3 | 0109 | 3 | 0109 | 3 | 0109 | 0 | 0109 | 0 | 01114900 |
| 0110 | 3 | 0110 | 3 | 0111 | 3 | 0111 | 3 | 0112 | 0 | 0112 | 0 | 01115000 |
| 0113 | 3 | 0113 | 3 | 0201 | 0 | 0202 | 3 | 0202 | 3 | 0203 | 0 | 01120000 |
| 0233 | 0 | 0234 | 3 | 0204 | 0 | 0205 | 3 | 0205 | 3 | 0206 | 0 | 01120100 |
| 0236 | 3 | 0207 | 3 | 0204 | 0 | 0209 | 0 | 0209 | 0 | 0209 | 0 | 01120200 |
| 0210 | 0 | 0211 | 3 | 0211 | 0 | 0301 | 0 | 0301 | 240 | 0302 | 0 | 01120300 |
| 0332 | 0 | 0302 | 3 | 0303 | 0 | 0303 | 0 | 0303 | 0 | 0304 | 0 | 01120400 |
| 0334 | 3 | 0305 | 3 | 0306 | 3 | 0307 | 3 | 0309 | 0 | 0304 | 0 | 01120500 |
| 0330 | 3 | 0310 | 3 | 0311 | 3 | 0312 | 3 | 0313 | 3 | 0314 | 0 | 01120600 |
| 0315 | 0 | 0315 | 3 | 0317 | 3 | 0319 | 3 | 0319 | 0 | 0320 | 0 | 01120700 |
| 0321 | 0 | 0322 | 3 | 0323 | 0 | 0324 | 3 | 0325 | 0 | 0326 | 0 | 01120800 |
| 0327 | 3 | 0324 | 3 | 0320 | 3 | 0330 | 3 | 0331 | 0 | 0332 | 0 | 01120900 |
| 0333 | 3 | 0334 | 3 | 0335 | 3 | 0336 | 3 | 0337 | 3 | 0337 | 0 | 01121000 |
| 0339 | 3 | 0339 | 3 | 0339 | 0 | 0340 | 3 | 0341 | 3 | 0342 | 0 | 01121100 |
| 0333 | 3 | 0344 | 3 | 0345 | 3 | 0345 | 0 | 0346 | 0 | 0347 | 0 | 01121200 |
| 0304 | 0 | 0340 | 3 | 0350 | 3 | 0351 | 3 | 0351 | 3 | 0401 | 0 | 01121300 |
| 0431 | 0 | 0402 | 0 | 0402 | 3 | 0403 | 3 | 0403 | 3 | 0404 | 0 | 01121400 |
| 0435 | 3 | 0405 | 1440 | 0405 | 3 | 0406 | 3 | 0406 | 0 | 0407 | 0 | 01121500 |
| 0437 | 3 | 0404 | 3 | 0404 | 3 | 0409 | 3 | 0409 | 0 | 0410 | 0 | 01121600 |
| 0410 | 3 | 0411 | 3 | 0412 | 0 | 0412 | 3 | 0413 | 0 | 0413 | 0 | 01121700 |
| 0501 | 0 | 0501 | 3 | 0501 | 3 | 0502 | 3 | 0502 | 0 | 0503 | 0 | 01121800 |
| 0533 | 3 | 0504 | 3 | 0504 | 3 | 0505 | 3 | 0505 | 0 | 0506 | 0 | 01121900 |
| 0536 | 0 | 0507 | 3 | 0507 | 3 | 0508 | 0 | 0504 | 3 | 0509 | 0 | 01122000 |
| 0530 | 3 | 0601 | 3 | 0601 | 0 | 0602 | 3 | 0603 | 0 | 0603 | 0 | 01122100 |
| 0634 | 3 | 0603 | 3 | 0605 | 0 | 0605 | 3 | 0606 | 0 | 0606 | 0 | 01122200 |
| 0637 | 3 | 0701 | 3 | 0702 | 0 | 0702 | 3 | 0703 | 0 | 0703 | 0 | 01122300 |
| 0734 | 3 | 0704 | 3 | 0705 | 3 | 0705 | 3 | 0707 | 3 | 0707 | 0 | 01122400 |
| 0734 | 0 | 0709 | 0 | 0709 | 3 | 0709 | 3 | 0709 | 3 | 0710 | 0 | 01122500 |
| 0710 | 3 | 0711 | 3 | 0711 | 3 | 0712 | 3 | 0712 | 0 | 0713 | 0 | 01122600 |
| 0713 | 3 | 0714 | 3 | 0715 | 3 | 0715 | 0 | 0801 | 3 | 0801 | 0 | 01122700 |
| 0832 | 3 | 0812 | 3 | 0801 | 0 | 0801 | 3 | 0801 | 3 | 0802 | 0 | 01122800 |
| 0832 | 3 | 0802 | 3 | 0803 | 3 | 0803 | 3 | 0804 | 1200 | 0804 | 0 | 01122900 |
| 0834 | 3 | 0815 | 3 | 0805 | 3 | 0806 | 0 | 0806 | 0 | 0807 | 0 | 01123000 |

| | | | | | | | | | | | | |
|------|--------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|--------------------|-------------|-------------|-------------|
| 0000 | 017 | 0021 | 014 | 0025 | 010 | 0024 | 020 | 0027 | 021 | 0028 | 022 | 00125000 |
| 0000 | 024 | 0030 | 024 | 0031 | 025 | 0032 | 026 | 0033 | 027 | 0034 | 028 | 00125100 |
| 0000 | 029 | 0036 | 029 | 0037 | 031 | 0038 | 032 | 0039 | 033 | 0040 | 034 | 00125200 |
| 0001 | 035 | 0042 | 036 | 1001 | 037 | 1002 | 039 | 1003 | 039 | 1004 | 040 | 00125300 |
| 1005 | 041 | 1106 | 042 | 1017 | 043 | 1009 | 044 | 1009 | 045 | 1010 | 046 | 00125400 |
| 1011 | 047 | 1012 | 049 | 1013 | 049 | 1014 | 050 | 1015 | 051 | 1016 | 052 | 00125500 |
| 1017 | 053 | 1019 | 054 | 1014 | 055 | 1020 | 056 | 1021 | 057 | 1022 | 058 | 00125600 |
| 1023 | 059 | 1101 | 060 | 1102 | 061 | 1103 | 062 | 1104 | 063 | 1105 | 064 | 00125700 |
| 1106 | 065 | 1107 | 066 | 1109 | 067 | 1109 | 069 | 1110 | 069 | 1111 | 070 | 00125800 |
| 1112 | 071 | 1113 | 072 | 1114 | 073 | 1115 | 074 | 1116 | 075 | 1117 | 076 | 00125900 |
| 1119 | 077 | 1119 | 079 | 1120 | 079 | 1121 | 080 | 1122 | 081 | 1123 | 082 | 00126000 |
| 1124 | 083 | 1125 | 084 | 1126 | 085 | 1127 | 086 | 1129 | 087 | 1129 | 088 | 00126100 |
| 1130 | 089 | 1131 | 090 | 1132 | 091 | 1133 | 092 | 1134 | 093 | | | 00126200 |
| 09 | PERCENT 0479 (1-9) | | | | PERCENT 0479 (1-9) | | | | PERCENT 0479 (1-9) | | | |
| 0101 | 00000000101 | 00000000102 | 00000000102 | 00000000103 | 00000000103 | 00000000103 | 00000000103 | 00000000103 | 00000000103 | 00000000103 | 00000000103 | 00000000103 |
| 0100 | 00000000104 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 | 00000000105 |
| 0107 | 00000000107 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 | 00000000109 |
| 0100 | 00000000110 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 | 00000000111 |
| 0113 | 00000000113 | 00000000201 | 00000000201 | 00000000202 | 00000000202 | 00000000202 | 00000000202 | 00000000202 | 00000000202 | 00000000202 | 00000000202 | 00000000202 |
| 0203 | 00000000204 | 00000000204 | 00000000204 | 00000000205 | 00000000205 | 00000000205 | 00000000205 | 00000000205 | 00000000205 | 00000000205 | 00000000205 | 00000000205 |
| 0206 | 00000000207 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 | 00000000209 |
| 0200 | 00000000211 | 00000000211 | 00000000211 | 00000000301 | 00000000301 | 00000000301 | 00000000301 | 00000000301 | 00000000301 | 00000000301 | 00000000301 | 00000000301 |
| 0309 | 00000000302 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 | 00000000303 |
| 0300 | 00000000305 | 00000000306 | 00000000306 | 00000000307 | 00000000307 | 00000000307 | 00000000307 | 00000000307 | 00000000307 | 00000000307 | 00000000307 | 00000000307 |
| 0300 | 00000000310 | 00000000311 | 00000000311 | 00000000312 | 00000000312 | 00000000312 | 00000000312 | 00000000312 | 00000000312 | 00000000312 | 00000000312 | 00000000312 |
| 0305 | 00000000316 | 00000000317 | 00000000317 | 00000000319 | 00000000319 | 00000000319 | 00000000319 | 00000000319 | 00000000319 | 00000000319 | 00000000319 | 00000000319 |
| 0321 | 00000000322 | 00000000323 | 00000000323 | 00000000324 | 00000000324 | 00000000324 | 00000000324 | 00000000324 | 00000000324 | 00000000324 | 00000000324 | 00000000324 |
| 0327 | 00000000329 | 00000000329 | 00000000329 | 00000000330 | 00000000330 | 00000000330 | 00000000330 | 00000000330 | 00000000330 | 00000000330 | 00000000330 | 00000000330 |
| 0333 | 00000000334 | 00000000335 | 00000000335 | 00000000336 | 00000000336 | 00000000336 | 00000000336 | 00000000336 | 00000000336 | 00000000336 | 00000000336 | 00000000336 |
| 0338 | 00000000339 | 00000000339 | 00000000339 | 00000000340 | 00000000340 | 00000000340 | 00000000340 | 00000000340 | 00000000340 | 00000000340 | 00000000340 | 00000000340 |
| 0343 | 00000000344 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 | 00000000345 |
| 0348 | 00000000349 | 00000000350 | 00000000350 | 00000000351 | 00000000351 | 00000000351 | 00000000351 | 00000000351 | 00000000351 | 00000000351 | 00000000351 | 00000000351 |
| 0401 | 00000000402 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 | 00000000403 |
| 0405 | 00000000405 | 00000000405 | 00000000405 | 00000000406 | 00000000406 | 00000000406 | 00000000406 | 00000000406 | 00000000406 | 00000000406 | 00000000406 | 00000000406 |
| 0407 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 | 00000000409 |
| 0410 | 00000000411 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 | 00000000412 |
| 0501 | 00000000501 | 00000000501 | 00000000501 | 00000000502 | 00000000502 | 00000000502 | 00000000502 | 00000000502 | 00000000502 | 00000000502 | 00000000502 | 00000000502 |
| 0503 | 00000000504 | 00000000504 | 00000000504 | 00000000505 | 00000000505 | 00000000505 | 00000000505 | 00000000505 | 00000000505 | 00000000505 | 00000000505 | 00000000505 |
| 0506 | 00000000507 | 00000000507 | 00000000507 | 00000000508 | 00000000508 | 00000000508 | 00000000508 | 00000000508 | 00000000508 | 00000000508 | 00000000508 | 00000000508 |
| 0509 | 00000000501 | 00000000501 | 00000000501 | 00000000602 | 00000000602 | 00000000602 | 00000000602 | 00000000602 | 00000000602 | 00000000602 | 00000000602 | 00000000602 |
| 0600 | 00000000604 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 | 00000000605 |
| 0607 | 00000000701 | 00000000701 | 00000000701 | 00000000702 | 00000000702 | 00000000702 | 00000000702 | 00000000702 | 00000000702 | 00000000702 | 00000000702 | 00000000702 |
| 0700 | 00000000704 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 | 00000000705 |
| 0704 | 00000000708 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 | 00000000709 |
| 0710 | 00000000711 | 00000000711 | 00000000711 | 00000000712 | 00000000712 | 00000000712 | 00000000712 | 00000000712 | 00000000712 | 00000000712 | 00000000712 | 00000000712 |
| 0713 | 00000000714 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 | 00000000715 |
| 0800 | 00000000800 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 | 00000000801 |
| 0802 | 00000000802 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 | 00000000903 |
| 0800 | 00000000805 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 | 00000000905 |
| 0807 | 00000000807 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 | 00000000909 |
| 0809 | 00000000910 | 00000000910 | 00000000910 | 00000000911 | 00000000911 | 00000000911 | 00000000911 | 00000000911 | 00000000911 | 00000000911 | 00000000911 | 00000000911 |
| 0800 | 00000000800 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 | 00000000912 |

173

31 Function table 56 has been defined to provide the distribution of maintenance actions at the PMI conditional upon detection of maintenance at the PMI.

32 Function table 57 has been defined to identify the relative probability of maintenance by subsystem at the PMI.

33 Fullword save value 191 (X191) provides generality with respect to platoon size.

33

| | | | |
|---------|-----------------------|--|----------|
| INITIAL | 441(4,2),0 | UNACCRUITABLE MURDER-07 IMPACT | 00193700 |
| INITIAL | 441(5,3),0 | STIMULATED-907 SMR UP IN | 00193900 |
| INITIAL | 441(5,4),0 | OUTPUT 20127R | 00193900 |
| INITIAL | 441(5,7),0 | UNACCRUITABLE P4P MURDER | 00194000 |
| INITIAL | 441(6,1),0 | | 00194100 |
| INITIAL | 441(6,10),1 | NUMBER OF NEW BARRIERS ALLOWED | 00194200 |
| INITIAL | 441(1,1),90 | 1ST 941PT 3.1941PT-10THS | 00194300 |
| INITIAL | 441(2,1),90 | 2ND 941PT 3.1941PT-10THS | 00194400 |
| INITIAL | 441(1,4),60 | START 197 941PT OFFSET -10THS | 00194500 |
| INITIAL | 441(1,16),4.144R27 3P | A/C 222 COMPANY | 00194600 |
| INITIAL | 441(1,4),1 | LAUNCH # 1 MISSION TYPE-1ST PRIORITV00194700 | |
| INITIAL | 441(2,5),1 | LAUNCH # 2 MISSION TYPE-1ST PRIORITV00194800 | |
| INITIAL | 441(3,5),1 | LAUNCH # 3 MISSION TYPE-1ST PRIORITV00194900 | |
| INITIAL | 441(4,5),1 | LAUNCH # 4 MISSION TYPE-1ST PRIORITV00195000 | |
| INITIAL | 441(5,5),1 | LAUNCH # 5 MISSION TYPE-1ST PRIORITV00195100 | |
| INITIAL | 441(6,5),1 | LAUNCH # 6 MISSION TYPE-1ST PRIORITV00195200 | |
| INITIAL | 441(7,5),1 | LAUNCH # 7 MISSION TYPE-1ST PRIORITV00195300 | |
| INITIAL | 441(8,5),1 | LAUNCH # 8 MISSION TYPE-1ST PRIORITV00195400 | |
| INITIAL | 441(9,5),1 | LAUNCH # 9 MISSION TYPE-1ST PRIORITV00195500 | |
| INITIAL | 441(1,10),3 | LAUNCH # 1 NUMBER A/C -1ST PRIORITV00195600 | |
| INITIAL | 441(2,10),3 | LAUNCH # 2 NUMBER A/C -1ST PRIORITV00195700 | |
| INITIAL | 441(3,10),3 | LAUNCH # 3 NUMBER A/C -1ST PRIORITV00195800 | |
| INITIAL | 441(4,10),3 | LAUNCH # 4 NUMBER A/C -1ST PRIORITV00195900 | |
| INITIAL | 441(5,10),3 | LAUNCH # 5 NUMBER A/C -1ST PRIORITV00196000 | |
| INITIAL | 441(6,10),3 | LAUNCH # 6 NUMBER A/C -1ST PRIORITV00196100 | |
| INITIAL | 441(7,10),3 | LAUNCH # 7 NUMBER A/C -1ST PRIORITV00196200 | |
| INITIAL | 441(8,10),3 | LAUNCH # 8 NUMBER A/C -1ST PRIORITV00196300 | |
| INITIAL | 441(9,10),3 | LAUNCH # 9 NUMBER A/C -1ST PRIORITV00196400 | |
| INITIAL | 441(1,11),70 | TIME TO 3234 1ST LAUNCH PREP. | 00196500 |
| | | NUMBER OF BLOCK UNITS. | 00196600 |
| INITIAL | 441(2,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00196700 |
| INITIAL | 441(3,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00196800 |
| INITIAL | 441(4,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00196900 |
| INITIAL | 441(5,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00197000 |
| INITIAL | 441(6,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00197100 |
| INITIAL | 441(7,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00197200 |
| INITIAL | 441(8,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00197300 |
| INITIAL | 441(9,11),15 | TIME BETWEEN THIS LAUNCH & PREVIOUS | 00197400 |
| INITIAL | 441(1,12),9 | NUMBER OF LAUNCHES PER DAY | 00197500 |
| INITIAL | 441(2,12),0 | PLACE TIME MISSION TYPE 1 (10THS) | 00197600 |
| INITIAL | 441(3,12),0 | TOTAL TIME FROM CALL TO LAUNCH-10THS | 00197700 |
| INITIAL | 441(4,13),0 | 2ND 941PT 3.1941PT-10THS | 00197800 |
| INITIAL | 441(5,13),0 | LAUNCH TIME TO REPLACE ABORTS-10THS | 00197900 |
| INITIAL | 441(1,17),999 | PERCENT IN-FLY AFTER REPLACES/1000 | 00198000 |
| INITIAL | 441(1,15),1 | 4.1941PT 3.1941PT A/C BY MISSION TYPE | 00198100 |
| INITIAL | 441(1,19),7 | FLY INTERVAL FOR REPAIR REPLACEMENTS | 00198200 |
| INITIAL | 441(1,19),2 | 4.1941PT 3.1941PT A/C BY MISSION TYPE | 00198300 |
| INITIAL | 441(1,21),5 | TIME LAUNCH INTERVAL STAYS OPEN | 00198400 |
| INITIAL | 441(26,1),2403 | 2ND INTERVAL IN 4RS-ITEM # 1 | 00198500 |
| INITIAL | 441(26,2),1403 | 3RD INTERVAL IN 4RS-ITEM # 2 | 00198600 |
| INITIAL | 441(26,3),2403 | 4TH INTERVAL IN 4RS-ITEM # 3 | 00198700 |

| | | | | | | |
|---------|------------------|-----------------|----|----------|------|----------|
| INVTZAL | 446(26,4),1200 | T97 INVTZVAL | IN | 489-TZEM | # 4 | 01159400 |
| INVTZAL | 446(26,5),1200 | T87 INVTZVAL | IN | 489-TZEM | # 5 | 01159500 |
| INVTZAL | 446(26,6),1200 | T87 INVTZVAL | IN | 489-TZEM | # 6 | 01159600 |
| INVTZAL | 446(26,7),1200 | T87 INVTZVAL | IN | 489-TZEM | # 7 | 01159700 |
| INVTZAL | 446(26,8),1200 | T87 INVTZVAL | IN | 489-TZEM | # 8 | 01159800 |
| INVTZAL | 446(26,9),2400 | T87 INVTZVAL | IN | 489-TZEM | # 9 | 01159900 |
| INVTZAL | 446(26,10),2400 | T87 INVTZVAL | IN | 489-TZEM | # 10 | 01160000 |
| INVTZAL | 446(26,11),1200 | T87 INVTZVAL | IN | 489-TZEM | # 11 | 01160100 |
| INVTZAL | 446(26,12),1200 | T87 INVTZVAL | IN | 489-TZEM | # 12 | 01160200 |
| INVTZAL | 446(26,13),1200 | T87 INVTZVAL | IN | 489-TZEM | # 13 | 01160300 |
| INVTZAL | 446(26,14),1200 | T87 INVTZVAL | IN | 489-TZEM | # 14 | 01160400 |
| INVTZAL | 446(26,15),300 | T87 INVTZVAL | IN | 489-TZEM | # 15 | 01160500 |
| INVTZAL | 446(26,16),300 | T87 INVTZVAL | IN | 489-TZEM | # 16 | 01160600 |
| INVTZAL | 446(26,17),30000 | T87 INVTZVAL | IN | 489-TZEM | # 17 | 01160700 |
| INVTZAL | 446(26,18),30000 | T87 INVTZVAL | IN | 489-TZEM | # 18 | 01160800 |
| INVTZAL | 446(27,1),0317 | T87 INVTZVAL | IN | 489-TZEM | # 1 | 01160900 |
| INVTZAL | 446(27,2),0323 | T87 INVTZVAL | IN | 489-TZEM | # 2 | 01161000 |
| INVTZAL | 446(27,3),0323 | T87 INVTZVAL | IN | 489-TZEM | # 3 | 01161100 |
| INVTZAL | 446(27,4),0333 | T87 INVTZVAL | IN | 489-TZEM | # 4 | 01161200 |
| INVTZAL | 446(27,5),0333 | T87 INVTZVAL | IN | 489-TZEM | # 5 | 01161300 |
| INVTZAL | 446(27,6),0337 | T87 INVTZVAL | IN | 489-TZEM | # 6 | 01161400 |
| INVTZAL | 446(27,7),0337 | T87 INVTZVAL | IN | 489-TZEM | # 7 | 01161500 |
| INVTZAL | 446(27,8),0341 | T87 INVTZVAL | IN | 489-TZEM | # 8 | 01161600 |
| INVTZAL | 446(27,9),0343 | T87 INVTZVAL | IN | 489-TZEM | # 9 | 01161700 |
| INVTZAL | 446(27,10),0357 | T87 INVTZVAL | IN | 489-TZEM | # 10 | 01161800 |
| INVTZAL | 446(27,11),0331 | T87 INVTZVAL | IN | 489-TZEM | # 11 | 01161900 |
| INVTZAL | 446(27,12),0332 | T87 INVTZVAL | IN | 489-TZEM | # 12 | 01162000 |
| INVTZAL | 446(27,13),0336 | T87 INVTZVAL | IN | 489-TZEM | # 13 | 01162100 |
| INVTZAL | 446(27,14),0330 | T87 INVTZVAL | IN | 489-TZEM | # 14 | 01162200 |
| INVTZAL | 446(27,15),1127 | T87 INVTZVAL | IN | 489-TZEM | # 15 | 01162300 |
| INVTZAL | 446(27,16),1131 | T87 INVTZVAL | IN | 489-TZEM | # 16 | 01162400 |
| INVTZAL | 446(27,17),1134 | T87 INVTZVAL | IN | 489-TZEM | # 17 | 01162500 |
| INVTZAL | 446(27,18),1134 | T87 INVTZVAL | IN | 489-TZEM | # 18 | 01162600 |
| INVTZAL | 441(4,17),1600 | FLYING INVTZVAL | | | | 01162700 |
| INVTZAL | 443(4,2),1600 | FLYING INVTZVAL | | | | 01162800 |
| INVTZAL | 443(4,3),40 | FLYING INVTZVAL | | | | 01162900 |
| INVTZAL | 443(4,4),60 | FLYING INVTZVAL | | | | 01163000 |
| INVTZAL | 443(4,5),1 | FLYING INVTZVAL | | | | 01163100 |
| INVTZAL | 443(4,6),58 | FLYING INVTZVAL | | | | 01163200 |
| INVTZAL | 441(2,12),50 | FLYING INVTZVAL | | | | 01163300 |
| INVTZAL | 446(29,1),6 | FLYING INVTZVAL | | | | 01163400 |
| INVTZAL | 446(29,2),6 | FLYING INVTZVAL | | | | 01163500 |
| INVTZAL | 446(29,3),6 | FLYING INVTZVAL | | | | 01163600 |
| INVTZAL | 446(29,4),6 | FLYING INVTZVAL | | | | 01163700 |
| INVTZAL | 446(29,5),6 | FLYING INVTZVAL | | | | 01163800 |
| INVTZAL | 446(29,6),6 | FLYING INVTZVAL | | | | 01163900 |
| INVTZAL | 446(29,7),6 | FLYING INVTZVAL | | | | 01164000 |
| INVTZAL | 446(29,8),6 | FLYING INVTZVAL | | | | 01164100 |
| INVTZAL | 446(29,9),6 | FLYING INVTZVAL | | | | 01164200 |
| INVTZAL | 446(29,10),6 | FLYING INVTZVAL | | | | 01164300 |

34 Fullword save value 189 has been established to identify the PMP interval in tenths of hours.

35 Fullword save value 193 identifies the number of "week end" nonworking hours per week in tenths of hours.

36 Fullword save value 194 identifies the number of aircraft required for the first mission of the next day. It is employed to determine whether or not maintenance personnel should be required for overtime maintenance at the end of the day. If this save value is not defined, no overtime will take place.

37 Fullword save value 190 has been identified to establish the PMI interval in tenths of hours.

38 Fullword save value 192 identifies the number of working days per week.

39 Fullword save value 195 identifies the number of days between calendar inspections. If no calendar inspections are to be performed, input a dummy value of 30,000.

40 Fullword save value 196 identifies the window for calendar PMP activation. If no calendar inspection is desired, input a dummy value of zero.

41 Fullword save value 197 contains the number of TBO components per aircraft. It must be a number less than 25.

[illegible]

| | | | |
|------|--------|-------------------|----------|
| | 899130 | 20,41 | 01140700 |
| | 899130 | 5,01 | 01140800 |
| | 90011 | 1,844,25 | 01140900 |
| | 90011 | 246,23,4 | 01141000 |
| 9454 | 899130 | 15,4,6,7,20,15,1 | 01141100 |
| | 899130 | 15,4,6,9,24,15,1 | 01141200 |
| 9454 | 90011 | 1,2,4,1,11,22,947 | 01141300 |
| | 899130 | 5,947 | 01141400 |
| 9453 | 899130 | 10,41 | 01141500 |
| 9453 | 899130 | 21,46,945 | 01141600 |
| | 899130 | 21,47,945 | 01141700 |
| | 899130 | 7 | 01141800 |
| | 899130 | 11,1 | 01141900 |
| | 899130 | 2,441(3,12) | 01142000 |
| 9454 | 899130 | 1 | 01142100 |
| | 899130 | 227,24,947 | 01142200 |
| | 899130 | 2,63-37,1,,4243 | 01142300 |
| | 899130 | 1,63-20,,40 | 01142400 |
| | 899130 | 50,41 | 01142500 |
| 8953 | 899130 | 50,23,4 | 01142600 |
| | 899130 | 1,945 | 01142700 |
| 9454 | 899130 | 2,441 | 01142800 |
| | 899130 | 1,945 | 01142900 |
| 9453 | 899130 | 1,41 | 01143000 |
| | 899130 | 2,441(62,12) | 01143100 |
| | 899130 | 1,945 | 01143200 |
| 9453 | 899130 | 441(3,12) | 01143300 |
| | 899130 | 1,945 | 01143400 |
| | 899130 | 1,945 | 01143500 |
| | 899130 | 1,945 | 01143600 |
| | 899130 | 1,945 | 01143700 |
| | 899130 | 1,945 | 01143800 |
| | 899130 | 1,945 | 01143900 |
| | 899130 | 1,945 | 01144000 |
| | 899130 | 1,945 | 01144100 |
| | 899130 | 1,945 | 01144200 |
| | 899130 | 1,945 | 01144300 |
| | 899130 | 1,945 | 01144400 |
| | 899130 | 1,945 | 01144500 |
| | 899130 | 1,945 | 01144600 |
| | 899130 | 1,945 | 01144700 |
| | 899130 | 1,945 | 01144800 |
| | 899130 | 1,945 | 01144900 |
| | 899130 | 1,945 | 01145000 |
| | 899130 | 1,945 | 01145100 |
| | 899130 | 1,945 | 01145200 |
| | 899130 | 1,945 | 01145300 |
| | 899130 | 1,945 | 01145400 |
| | 899130 | 1,945 | 01145500 |
| | 899130 | 1,945 | 01145600 |
| | 899130 | 1,945 | 01145700 |
| | 899130 | 1,945 | 01145800 |
| | 899130 | 1,945 | 01145900 |
| | 899130 | 1,945 | 01146000 |
| | 899130 | 1,945 | 01146100 |
| | 899130 | 1,945 | 01146200 |
| | 899130 | 1,945 | 01146300 |
| | 899130 | 1,945 | 01146400 |
| | 899130 | 1,945 | 01146500 |
| | 899130 | 1,945 | 01146600 |
| | 899130 | 1,945 | 01146700 |
| | 899130 | 1,945 | 01146800 |
| | 899130 | 1,945 | 01146900 |
| | 899130 | 1,945 | 01147000 |
| | 899130 | 1,945 | 01147100 |
| | 899130 | 1,945 | 01147200 |
| | 899130 | 1,945 | 01147300 |
| | 899130 | 1,945 | 01147400 |
| | 899130 | 1,945 | 01147500 |
| | 899130 | 1,945 | 01147600 |
| | 899130 | 1,945 | 01147700 |
| | 899130 | 1,945 | 01147800 |
| | 899130 | 1,945 | 01147900 |
| | 899130 | 1,945 | 01148000 |
| | 899130 | 1,945 | 01148100 |
| | 899130 | 1,945 | 01148200 |
| | 899130 | 1,945 | 01148300 |
| | 899130 | 1,945 | 01148400 |
| | 899130 | 1,945 | 01148500 |
| | 899130 | 1,945 | 01148600 |
| | 899130 | 1,945 | 01148700 |
| | 899130 | 1,945 | 01148800 |
| | 899130 | 1,945 | 01148900 |
| | 899130 | 1,945 | 01149000 |
| | 899130 | 1,945 | 01149100 |
| | 899130 | 1,945 | 01149200 |
| | 899130 | 1,945 | 01149300 |
| | 899130 | 1,945 | 01149400 |
| | 899130 | 1,945 | 01149500 |
| | 899130 | 1,945 | 01149600 |
| | 899130 | 1,945 | 01149700 |
| | 899130 | 1,945 | 01149800 |
| | 899130 | 1,945 | 01149900 |
| | 899130 | 1,945 | 01150000 |
| | 899130 | 1,945 | 01150100 |
| | 899130 | 1,945 | 01150200 |
| | 899130 | 1,945 | 01150300 |
| | 899130 | 1,945 | 01150400 |
| | 899130 | 1,945 | 01150500 |
| | 899130 | 1,945 | 01150600 |
| | 899130 | 1,945 | 01150700 |
| | 899130 | 1,945 | 01150800 |
| | 899130 | 1,945 | 01150900 |
| | 899130 | 1,945 | 01151000 |
| | 899130 | 1,945 | 01151100 |
| | 899130 | 1,945 | 01151200 |
| | 899130 | 1,945 | 01151300 |
| | 899130 | 1,945 | 01151400 |
| | 899130 | 1,945 | 01151500 |
| | 899130 | 1,945 | 01151600 |
| | 899130 | 1,945 | 01151700 |
| | 899130 | 1,945 | 01151800 |
| | 899130 | 1,945 | 01151900 |
| | 899130 | 1,945 | 01152000 |
| | 899130 | 1,945 | 01152100 |
| | 899130 | 1,945 | 01152200 |
| | 899130 | 1,945 | 01152300 |
| | 899130 | 1,945 | 01152400 |
| | 899130 | 1,945 | 01152500 |
| | 899130 | 1,945 | 01152600 |
| | 899130 | 1,945 | 01152700 |
| | 899130 | 1,945 | 01152800 |
| | 899130 | 1,945 | 01152900 |
| | 899130 | 1,945 | 01153000 |
| | 899130 | 1,945 | 01153100 |
| | 899130 | 1,945 | 01153200 |
| | 899130 | 1,945 | 01153300 |
| | 899130 | 1,945 | 01153400 |
| | 899130 | 1,945 | 01153500 |
| | 899130 | 1,945 | 01153600 |
| | 899130 | 1,945 | 01153700 |
| | 899130 | 1,945 | 01153800 |
| | 899130 | 1,945 | 01153900 |
| | 899130 | 1,945 | 01154000 |
| | 899130 | 1,945 | 01154100 |
| | 899130 | 1,945 | 01154200 |
| | 899130 | 1,945 | 01154300 |
| | 899130 | 1,945 | 01154400 |
| | 899130 | 1,945 | 01154500 |
| | 899130 | 1,945 | 01154600 |
| | 899130 | 1,945 | 01154700 |
| | 899130 | 1,945 | 01154800 |
| | 899130 | 1,945 | 01154900 |
| | 899130 | 1,945 | 01155000 |
| | 899130 | 1,945 | 01155100 |
| | 899130 | 1,945 | 01155200 |
| | 899130 | 1,945 | 01155300 |
| | 899130 | 1,945 | 01155400 |
| | 899130 | 1,945 | 01155500 |
| | 899130 | 1,945 | 01155600 |
| | 899130 | 1,945 | 01155700 |
| | 899130 | 1,945 | 01155800 |
| | 899130 | 1,945 | 01155900 |
| | 899130 | 1,945 | 01156000 |
| | 899130 | 1,945 | 01156100 |
| | 899130 | 1,945 | 01156200 |
| | 899130 | 1,945 | 01156300 |
| | 899130 | 1,945 | 01156400 |
| | 899130 | 1,945 | 01156500 |
| | 899130 | 1,945 | 01156600 |
| | 899130 | 1,945 | 01156700 |
| | 899130 | 1,945 | 01156800 |
| | 899130 | 1,945 | 01156900 |
| | 899130 | 1,945 | 01157000 |
| | 899130 | 1,945 | 01157100 |
| | 899130 | 1,945 | 01157200 |
| | 899130 | 1,945 | 01157300 |
| | 899130 | 1,945 | 01157400 |
| | 899130 | 1,945 | 01157500 |
| | 899130 | 1,945 | 01157600 |
| | 899130 | 1,945 | 01157700 |
| | 899130 | 1,945 | 01157800 |
| | 899130 | 1,945 | 01157900 |
| | 899130 | 1,945 | 01158000 |
| | 899130 | 1,945 | 01158100 |
| | 899130 | 1,945 | 01158200 |
| | 899130 | 1,945 | 01158300 |
| | 899130 | 1,945 | 01158400 |
| | 899130 | 1,945 | 01158500 |
| | 899130 | 1,945 | 01158600 |
| | 899130 | 1,945 | 01158700 |
| | 899130 | 1,945 | 01158800 |
| | 899130 | 1,945 | 01158900 |
| | 899130 | 1,945 | 01159000 |
| | 899130 | 1,945 | 01159100 |
| | 899130 | 1,945 | 01159200 |
| | 899130 | 1,945 | 01159300 |
| | 899130 | 1,945 | 01159400 |
| | 899130 | 1,945 | 01159500 |
| | 899130 | 1,945 | 01159600 |
| | 899130 | 1,945 | 01159700 |
| | 899130 | 1,945 | 01159800 |
| | 899130 | 1,945 | 01159900 |
| | 899130 | 1,945 | 01160000 |

| | | | |
|-----|-----------|---------------|----------|
| | ADVANCE: | P6 | 00174100 |
| | JNLENK | 2,8480,1 | 00174200 |
| | JNLENK | 2,PTJ,1,,,PTZ | 00174300 |
| | TRANSFER | ,PTJ | 00174400 |
| PTZ | LOGICR | 1 | 00174500 |
| PTB | ADVANCE: | P3 | 00174600 |
| | TRANSFER | ,PTC | 00174700 |
| PTP | LENK | 2,PTPO | 00174800 |
| PTD | TRANSFER | ,PTP | 00174900 |
| PTM | ASSIGN | 1,4X1(4,6) | 00175000 |
| | TEST GE | P1,40,8480 | 00175100 |
| | SPLIT | 1,PTQ,,25 | 00175200 |
| PTJ | TEST GE | 411,P1,PTK | 00175300 |
| | LOGICR | 2 | 00175400 |
| | LOGICR | 1 | 00175500 |
| | TERMINATE | | 00175600 |
| PTN | ADVANCE: | 20 | 00175700 |
| | TRANSFER | ,PTJ | 00175800 |
| PTQ | SPLIT | 1,PTL,25 | 00175900 |
| | SPLIT | 1,PTT,,25 | 00176000 |
| | SPLIT | 4,PTX,11,25 | 00176100 |
| PTX | ASSIGN | 9,441(V2,10) | 00176200 |
| | TEST GE | P0,41,8480 | 00176300 |
| | ASSIGN | 1,V3 | 00176400 |
| | ASSIGN | 6,441(V2,17) | 00176500 |
| | LOGICR | V7 | 00176600 |
| | ADVANCE: | 441(V2,16) | 00176700 |
| PTZ | LOGICR | V7 | 00176800 |
| | ADVANCE: | P6 | 00176900 |
| | LOGICR | V7 | 00177000 |
| | ADVANCE: | P0 | 00177100 |
| | DATE LR | P1,8480 | 00177200 |
| | TRANSFER | ,PTZ | 00177300 |
| PTL | SPLIT | 4,PTP,11,25 | 00177400 |
| PTP | ASSIGN | 9,441(V2,14) | 00177500 |
| | TEST GE | P0,41,8480 | 00177600 |
| | ASSIGN | 1,V3 | 00177700 |
| | ASSIGN | 8,V4 | 00177800 |
| PTN | TEST GE | 440,P0,PTM | 00177900 |
| | LOGICR | V7 | 00178000 |
| | LOGICR | 01 | 00178100 |
| | TERMINATE | | 00178200 |
| PTM | ADVANCE: | 10 | 00178300 |
| | TRANSFER | ,PTN | 00178400 |
| PTT | SPLIT | 4,PTJ,11,25 | 00178500 |
| PTB | ASSIGN | 9,441(V2,15) | 00178600 |
| | TEST GE | P0,41,8480 | 00178700 |
| | LOGICR | V7 | 00178800 |
| | ADVANCE: | P0 | 00178900 |
| | LOGICR | V7 | 00179000 |
| | TERMINATE | | 00179100 |

J374 37
 A99134 17.9
 SAVEVALUE V155+.41
 SAVEVALUE V156+.41
 SAVEVALUE 400+.41
 SAVEVALUE 1000+.41
 TRANSFER .44433

STANDARD AIRCRAFT SUBJECTIVE

9AC4 A99134 70
 A99134 4.40
 9AC3 A99134 4.9AC3, 4.25
 A99134 3.441(44,15)
 9AC3 9AC3 19.9433
 TEST 02 23.41, 9AC3
 9AC3 9AC3 9434
 A99134 2.38
 9AC3 9AC3 16.44, 9.44, 15.1
 9AC3 9AC3 1.9433
 TEST 2 23.41, 9433
 9AC3 9AC3 1.9444, 1.9444, 9433
 9AC3 9AC3 3.9433
 9AC3 A99134 1.41
 TEST 02 21.44, 9AC3
 A99134 3.32
 A99134 1.40
 ADVANCE 1
 TRANSFER .9AC3
 9AC3 A99134 4.441
 TRANSFER .9AC3
 9AC4 A99134 4.44
 9AC4 9AC4 32
 A99134 1.40
 A99134 3.1
 TRANSFER .9AC3
 9AC4 A99134 9.41
 TRANSFER .9AC4

AIRCRAFT MAINLINE SUBJECTIVE

PRELIMINARY L374

9AC4 A99134 16.1
 9AC3 A99134 15.2
 TEST 2 215.40, 44441

01144300
 01144400
 01144500
 01144600
 01144700
 01144800
 01144900
 01145000
 01145100
 01145200
 01145300
 01145400
 01145500
 01145600
 01145700
 01145800
 01145900
 01146000
 01146100
 01146200
 01146300
 01146400
 01146500
 01146600
 01146700
 01146800
 01146900
 01147000
 01147100
 01147200
 01147300
 01147400
 01147500
 01147600
 01147700
 01147800
 01147900
 01148000
 01148100
 01148200
 01148300
 01148400
 01148500
 01148600
 01148700
 01148800
 01148900
 01149000
 01149100
 01149200
 01149300
 01149400
 01149500
 01149600
 01149700
 01149800
 01149900
 01150000

42 Card 1805 (ZZB) has been generalized with respect to platoon size by the use of save value 191 in place of a constant in the logic.

43 Card 1809 has been modified to assign a random number of hours which is calculated through variable 231 to parameter 40, that is, the initial hours on the aircraft. Variable 231 generates a 6-digit random number which is then taken modulo save value 189 which is the input value of the PMP interval. Thus, this assign statement generates values for parameter 40 which are dependent only upon an input parameter, namely value 189, rather than logically dependent upon a constant, as was the case of the original UH-1 model when this assign statement generated values for parameter 40 as a function of random number generator 1. Thus the original UH-1 logic always generated initial airframe hours in the interval 0 to 99 hours.

44 Card 181010 has been added to assign a random number of hours since last daily inspection to each aircraft through variable 237.

45 Card 1816 has been modified, due to the increase in model size, to facilitate a 24 aircraft platoon.

46 Card 1818 has been modified to accommodate a platoon size of 24 aircraft.

47 Cards 1824 to 1828 have been modified to ensure against certain rather obscure situations; aircraft could be subjected to extra erroneous PMI inspections which originally could arise in the Government-furnished UH-1 model. Modifications to the logic shown in these blocks insure that this situation will not occur. The logic has been changed by testing parameter 35 for a flag to determine whether or not the aircraft has just received an intermediate or a periodic inspection and therefore, has its parameter 35 value flagged at 999. Also, cards 1825 and 1826 have been generalized to be functionally dependent upon variables 234 and 235, rather than logically dependent upon constants as was the original case in the UH-1 model. Furthermore, the tests in cards 1825 and 1826 have been changed from a test less than or equal to, as was the case in the previous or original model, to a test less than. Again, it is felt that in certain obscure instances, the logic of the original model could allow aircraft to slip through this test and not undergo PMI or PMP inspections when really required. It should be noted here, however, that any of the modifications in this area of PMI, PMP interaction generalization were irrelevant to the original UH-1 model. This is because the original model required that all aircraft receiving PMP or PMI inspection would go through a test hop. In the case of the CH-47C and HLH, it is felt that an intermediate inspection would not require a test hop. Thus, this eventuality arose where PMP inspections could be erroneously duplicated.

GENERALI

00192600

48 Cards 1829 and 182910 have been added to check flying aircraft to see if they need a daily through Boolean variable 20.

| | | | | |
|-------|-----------|------------|-------------------------------|----------|
| 4LW2 | JJTN | 20 | THIS LOGIC IS VALID FOR | 00102700 |
| | ASSIGN | 35,40 | ALL RJNS TO STOP EXTRA PINT'S | 00102800 |
| 4AD | TEST W2 | SV20,1,DLB | FLYING AC SET CHECK FOR DAIL | 00102900 |
| | LEAK | 1,PTPJ | | 00102910 |
| 4AB | TEST W2 | P16,42,4AP | | 00103000 |
| | ASSIGN | 16,40 | | 00103100 |
| 4AP | PROSECUTE | 00 | | 00103200 |
| | TRANSFER | ,AAC | | 00103300 |
| ARM17 | ASSIGN | 15,40 | | 00103400 |
| | JJTN | 30 | | 00103500 |
| | ASSIGN | 17,17 | | 00103600 |
| | SAVEVALUE | V169+,K1 | | 00103700 |
| | SAVEVALUE | V170+,K1 | | 00103800 |
| | SAVEVALUE | 050+,K1 | | 00103900 |
| | SAVEVALUE | 1050+,K1 | | 00104000 |
| | TRANSFER | ,ARM19 | | 00104100 |
| ARM19 | ASSIGN | 15,40 | | 00104200 |

| | | | |
|-------|-----------|--------------------|----------|
| | SAVEVALUE | V1516.41 | 01199800 |
| | SAVEVALUE | 2258.41 | 01199500 |
| | SAVEVALUE | V1526.41 | 01199600 |
| | SAVEVALUE | 9256.41 | 01199700 |
| 19481 | RENDVE | 28 | 01199800 |
| | JCTN | 29 | 01199900 |
| P_MT | ASSIGN | 19.41 | 01100000 |
| | ASSIGN | 17.441(40,16) | 01100100 |
| | TEST VE | 09.011,PL40 | 01100200 |
| | ASSIGN | 9.41 | 01100300 |
| P_M3 | ASSIGN | 1.441(40,22) | 01100400 |
| P_MX | TEST E | 017.41,PL4C | 01100500 |
| | TRANSFER | .01,PL44,PL4C | 01100600 |
| P_MC | TRANSFER | 999.114.5 | 01100700 |
| | TEST LE | V13.042,PL44 | 01100800 |
| P_M4 | LEAVE | 17.044 | 01100900 |
| P_M4 | ASSIGN | 17.5 | 01101000 |
| | ENTER | 1 | 01101100 |
| | ADVANCE | 441(4,13) | 01101200 |
| | TABLEATE | 3 | 01101300 |
| | TEST LE | V13.042,PL4L | 01101400 |
| P_MJ | TEST VE | 015.41,PL4D | 01101500 |
| P_MP | ENTER | 2 | 01101600 |
| | STATE LS | V14 | 01101700 |
| P_M2 | RENDVE | 29 | 01101800 |
| | MARK | | 01101900 |
| | JULINK | 3.79744.4LL,12,212 | 01102000 |
| | LEAVE | 2 | 01102100 |
| | STATE LS | V13.044 | 01102200 |
| | TRANSFER | .PL74 | 01102300 |
| P_M4 | LEAVE | 1 | 01102400 |
| | TRANSFER | .443 | 01102500 |
| P_M4 | ASSIGN | 19.017 | 01102600 |
| | RENDVE | 29 | 01102700 |
| | ASSIGN | 19.044 | 01102800 |
| | TRANSFER | .044 | 01102900 |
| P_ML | ASSIGN | 19.017 | 01103000 |
| | RENDVE | 29 | 01103100 |
| | ASSIGN | 19.044 | 01103200 |
| | TRANSFER | .044 | 01103300 |
| P_M3 | JCTN | 27 | 01103400 |
| | RENDVE | 29 | 01103500 |
| | ASSIGN | 15.457 | 01103600 |
| | LINK | 2.017 | 01103700 |
| P_M2 | RENDVE | 27 | 01103800 |
| | ASSIGN | 15.42 | 01103900 |
| | SPLIT | 1.5444,60 | 01104000 |
| | JCTN | 29 | 01104100 |
| | TRANSFER | .044 | 01104200 |
| P_M4 | JCTN | 29 | 01104300 |
| | TRANSFER | .PL44 | 01104400 |

49 Cards 1973 through 1976 have been modified to tabulate flight time based upon input parameters in function 4 rather than based upon constants in the logic, as was the original case of the UH-1 model.

50 Card 1977 is a modification in the original logic of the model which accounts for airframe hours of the aircraft. This logic change is necessary to ensure that the total number of aborted test hop and mission flight hours are accounted for within the model.

51 Card 1994 has been modified due to the change in save value numbers generated by modifying the model to accommodate 24 aircraft.

52 Cards 1995 through 2002 have been modified similar to the previous set of blocks to ensure that flight hour accountability is functionally dependent upon input function 4, rather than logically dependent upon constants equal to the mission length as in the UH-1 model. Furthermore, modifications were made to card 2001 to ensure proper accounting of all test hop hours on parameter 40 for each aircraft.

- 52 Cards were modified to generalize flight hour accounting.
- 53 Card 200910 was added to flag aircraft that have flown, with a negative 720 in parameter 46.
- 54 Cards 2011 through 2016 have been added to the original logic to the UH-1 model to ensure that an aircraft which has just received a test hop and has aborted this test hop is routed properly and does not go into the PMI or PMP routine again.
- 55 Cards 2018 and 2019 have been modified to make sure that the flight hour accounting on aborted flights is functionally dependent upon input function table 4 rather than dependent upon a constant specifying the aborted mission length. Variable 18 takes the value for the mission length input through function table 4 and divides it by 2. An aborted flight will, therefore, take one half of the function 4 value rather than just having a constant built into the logic.
- 56 Cards 2020 and 2021 have been modified due to the change in save value number generated by increasing the model size to 24 aircraft.
- 57 Cards 2022 through 2025 have been modified to generalize accounting of aborted flight hours.
- 58 Cards 2026 to 2031 have been modified to generalize the model tests for PMP and PMI aircraft.
- 59 Card 203410 was added to flag aircraft that have flown, with a negative 720 in parameter 46.

| | | | | |
|--------|-----------|-----------------|------------------------------------|----------|
| 52 | SAVEVALUE | 9000,P48 | TEST FOR FLIGHT HOURS | 01100000 |
| | SAVEVALUE | V2000,K1 | | 00100700 |
| | SAVEVALUE | 13750,K1 | | 01100000 |
| | SAVEVALUE | V2000,P48 | THIS CHANGE IS GOOD FOR ALL | 01100000 |
| 52 | SAVEVALUE | 10000,P48 | SUBSEQUENT RUNS | 01200000 |
| | ASSIGN | 800,P48 | ACCOUNT FOR TEST HOURS ON P40 | 00200100 |
| | TRANSFER | ,PLT4 | | 01200200 |
| PLTC | TEST LE | V13,P45,PLTJ | | 00200300 |
| | ASSIGN | 13,6 | | 01200400 |
| | TRANSFER | ,PLTJ | | 00200500 |
| PLRJ | ASSIGN | 19,7 | | 01200600 |
| | TRANSFER | ,999,PLTF,PLT2 | | 01200700 |
| PLRF | JULINE | 8,PLTB,1,8,P8 | | 01200800 |
| PLRE | ADVANCE | V19 | | 00200900 |
| 53 | ASSIGN | 86,V237 | | 01200910 |
| | | | FOLLOWING CHANGE GOOD FOR ALL RUNS | 00201000 |
| | TEST Q | P9,K0,HLMS | ROUTE ADJUSTED TEST HOURS | 01201100 |
| | TEST L | V107,V234,HLM21 | GENERAL-ACCOUNTING INSURFS | 00201200 |
| | TEST L | V11,V236,HLM21 | TEST FOR CALENDAR PHP | 01201210 |
| | TEST L | V149,V235,HLM21 | AGAINST JUNE AN | 00201300 |
| 54 | TRANSFER | ,HLM22 | EXTRA PHP ON AN | 01201400 |
| | ASSIGN | 35,999 | ADJUSTED AFTER A | 00201500 |
| | SAVEVALUE | V2000,K1 | PHP, GOOD FOR ALL RUNS. | 01201600 |
| | SAVEVALUE | V2000,K1 | | 01201700 |
| 55 | SAVEVALUE | V2100,V10 | GENERALIZE ACCOUNTING OF | 01201800 |
| | SAVEVALUE | V2110,V10 | ABORTED FLIGHT TIME | 00201900 |
| 56 | SAVEVALUE | 10500,K1 | | 00202000 |
| | SAVEVALUE | 15000,K1 | CHANGES ARE GOOD FOR | 00202100 |
| | SAVEVALUE | 10750,V10 | ALL SUBSEQUENT RUNS | 00202200 |
| 57 | SAVEVALUE | 13950,V10 | ALL SUBSEQUENT RUNS | 01202300 |
| | ASSIGN | 800,V19 | ACCOUNT FOR ABORTED HRS ON A/C | 01202400 |
| | TRANSFER | ,PLT4 | CHANGES GOOD FOR ALL RUNS | 01202500 |
| | SAVEVALUE | 1950,K1 | ON ABORTED TEST HOURS | 01202600 |
| | ASSIGN | 800,V19 | GENERALIZE | 01202700 |
| 58 | TEST L | V107,V234,HLM5 | ACCOUNTING | 01202800 |
| | TEST L | V11,V236,HLM5 | TEST FOR CALENDAR PHP | 00202910 |
| | TEST L | V149,V235,HLM5 | ON ADJUSTED | 01202900 |
| | TRANSFER | ,PLT4 | TEST HOURS | 00203000 |
| | ASSIGN | 35,999 | | 01203100 |
| | TRANSFER | ,PLT4 | | 01203200 |
| PLTB | SPLOT | 1,9404,.60 | | 00203300 |
| | ADVANCE | 441(7,13) | | 01203400 |
| 59 | ASSIGN | 86,V237 | | 01203410 |
| | ASSIGN | 800,441(7,13) | | 00203500 |
| | 4404 | | | 00203600 |
| | ASSIGN | 90,K6 | | 00203700 |
| | TRANSFER | ,PLTB | | 00203800 |
| TEST40 | ASSIGN | 9,K0 | | 01203900 |
| | DATE LE | 1,449 | | 01204000 |
| | JUNE | 38 | | 00204100 |
| | 4404 | 6 | | 00204200 |
| | ENTER | 1 | | 00204300 |
| | DATE LE | 19 | | 00204400 |
| | SPLOT | 1,75249,.60 | | 01204500 |
| | LENA | 3,PTD | | 01204600 |

60 Card 2092 has been generalized by using a save value in the shift control logic rather than a constant.

● ● ● ●

• • • • •

•

•

60

•

61 Card 2100 has been generalized by using a save value in the shift control logic rather than a constant.

62 Card 210201 has no impact on the present model.

63 Cards 2111 and 211110 have been added for the daily inspection test. Mark 46 puts the present time in parameter 46 of the aircraft currently at this spot.

64 This change to Card 211510 is necessary for proper activation of the daily routine.

65 Cards 2122 and 2123 have been added to ensure that an aircraft that is in the daily routine and has just previously come from an intermediate inspection will not erroneously go back to the intermediate inspection routine.

| FLIGHT | TIME | ACTIVITY | TIME | ACTIVITY | TIME | ACTIVITY |
|--------|-------|--|---------------------|----------|----------|----------|
| 51 | 01:00 | ASSIGN ADVANCE | 02 | 01:00 | 00209900 | |
| | 01:00 | LOGO | 3,0LCS | 01:00 | 00209900 | |
| | 01:00 | ADVANCE | X103 | 01:00 | 00209901 | |
| | 01:00 | 34 THIS CARD FOR OTHER THAN A 7 5 V WEEK USE ADVANCE 480 | | 01:00 | 00210000 | |
| 52 | 01:00 | TRANSFER | AR416 | 01:00 | 00210100 | |
| | 01:00 | SUPPER | | 01:00 | 00210201 | |
| | 01:00 | TRANSFER | 0LCS | 01:00 | 00210201 | |
| | 01:00 | ASSIGN | 10,41 | 01:00 | 00210300 | |
| | 01:00 | TEST 2 | V21,40,0LCS | 01:00 | 00210400 | |
| | 01:00 | TRANSFER | 0LCS | 01:00 | 00210500 | |
| | 01:00 | ASSIGN | 16,40 | 01:00 | 00210600 | |
| | 01:00 | REMOVE | 27 | 01:00 | 00210700 | |
| | 01:00 | LEAVE | 1 | 01:00 | 00210800 | |
| | 01:00 | ASSIGN | 10,40 | 01:00 | 00210900 | |
| 53 | 01:00 | TEST 02 | V230,720,0LB2 | 01:00 | 00211000 | |
| | 01:00 | MARK | 46 | 01:00 | 00211100 | |
| | 01:00 | ASSIGN | 17,16 | 01:00 | 00211110 | |
| | 01:00 | REMOVE | 20 | 01:00 | 00211120 | |
| | 01:00 | ASSIGN | 16,40 | 01:00 | 00211200 | |
| | 01:00 | ASSIGN | 13,2 | 01:00 | 00211300 | |
| 54 | 01:00 | TRANSFER | 0LM | 01:00 | 00211400 | |
| | 01:00 | LEAVE | 1,PTD | 01:00 | 00211500 | |
| | 01:00 | ASSIGN | 17,416 | 01:00 | 00211510 | |
| | 01:00 | TEST 12 | P24,4X1(4,10),RLARA | 01:00 | 00211600 | |
| | 01:00 | JOIN | 33 | 01:00 | 00211700 | |
| | 01:00 | TRANSFER | 339,LEA,3 | 01:00 | 00211800 | |
| | 01:00 | ADVANCE | 40 | 01:00 | 00211900 | |
| | 01:00 | REMOVE | 33 | 01:00 | 00212000 | |
| 55 | 01:00 | TEST 02 | V140,V235,0LC | 01:00 | 00212100 | |
| | 01:00 | ASSIGN | 35,999 | 01:00 | 00212200 | |
| | 01:00 | TEST 3 | V13,P42,AAB | 01:00 | 00212300 | |
| | 01:00 | ASSIGN | 10,017 | 01:00 | 00212400 | |
| | 01:00 | ASSIGN | 19,9AAB | 01:00 | 00212500 | |
| | 01:00 | TRANSFER | 0C4 | 01:00 | 00212600 | |
| | 01:00 | | | 01:00 | 00212700 | |
| | 01:00 | | | 01:00 | 00212800 | |
| | 01:00 | | | 01:00 | 00212900 | |
| | 01:00 | | | 01:00 | 00213000 | |
| | 01:00 | | | 01:00 | 00213100 | |
| | 01:00 | | | 01:00 | 00213200 | |
| | 01:00 | | | 01:00 | 00213300 | |
| | 01:00 | | | 01:00 | 00213400 | |
| | 01:00 | | | 01:00 | 00213500 | |
| | 01:00 | | | 01:00 | 00213600 | |
| | 01:00 | | | 01:00 | 00213700 | |
| | 01:00 | | | 01:00 | 00213800 | |
| | 01:00 | | | 01:00 | 00213900 | |
| | 01:00 | | | 01:00 | 00214000 | |
| | 01:00 | | | 01:00 | 00214100 | |
| | 01:00 | | | 01:00 | 00214200 | |
| | 01:00 | | | 01:00 | 00214300 | |
| | 01:00 | | | 01:00 | 00214400 | |
| | 01:00 | | | 01:00 | 00214500 | |
| | 01:00 | | | 01:00 | 00214600 | |
| | 01:00 | | | 01:00 | 00214700 | |
| | 01:00 | | | 01:00 | 00214800 | |
| | 01:00 | | | 01:00 | 00214900 | |
| | 01:00 | | | 01:00 | 00215000 | |
| | 01:00 | | | 01:00 | 00 | |

66 Card 2199 has been modified to generalize the model with respect to the number of TBO components per aircraft through use of save value 197 rather than a constant in the logic.

67 Card 2200 has been generalized by use of save value 189, rather than a constant in the program logic.

68 Card 220010 has been added to zero out aircraft time since last calendar PMP.

69 Cards 2226 through 2236 have been modified or added to the original UH-1 logic to allow for the detection of failures at the intermediate inspection and to do away with test hops after the intermediate inspection. This logic is consistent with the baseline HLH and CH-47 maintenance concept. The maintenance concepts for the UH-1 model used in the baseline Government model did not provide for the detection of maintenance at the intermediate inspection.

| | | | | |
|----|-------|-----------|---|----------|
| 57 | AR422 | TEST 8 | V143,X189,AR428 GENERAL | 01220000 |
| 58 | AR421 | ASSIGN | 37,0 | 01220010 |
| | 04CY | LOGP | ZERO OUT TIME SINCE LAST CALENDAR INSP. | 01220100 |
| | 04CY | ADVANCE | 12,AR422 | 01220200 |
| | AR428 | PRICRITY | 20,81PPER | 01220300 |
| | | MARK | | 01220400 |
| | | ASSIGN | 35,909 | 01220500 |
| | | ASSIGN | 26,40 | 01220600 |
| | | ASSIGN | 15,2 | 01220700 |
| | | ASSIGN | 2',904CM | 01220800 |
| | | ASSIGN | 23,P47 | 01220900 |
| | | ASSIGN | 2,40 | 01221000 |
| | | SPLIT | 1,04CP,,60 | 01221100 |
| | | 2J7UE | P17 | 01221200 |
| | | ENTER | V26 | 01221300 |
| | | DEPART | P17 | 01221400 |
| | | SPLIT | 1,04C0,,60 | 01221500 |
| | | SPLIT | 1,04CR,,60 | 01221600 |
| | 04CY | ASSIGNBLE | 13 | 01221700 |
| | | PRICRITY | 00 | 01221800 |
| | | LEAVE | V26 | 01221900 |
| | | TABULATE | 3 | 01222000 |
| | | RENDVE | 30 | 01222100 |
| | | RENDVE | 37 | 01222200 |
| | | TEST NE | P17,417,P4CZ | 01222300 |
| | | TEST E | P17,40,AR433 | 01222400 |
| | AR433 | SPLIT | 1,REPO | 01222500 |
| | | TEST LE | V13,P42,4LM1 | 01222600 |
| | | ASSIGN | 27,41 | 01222700 |
| | | TEST E | P28,40,RLARA | 01222800 |
| | | TRANSFER | ,449 | 01222900 |
| | 04C44 | TEST LE | V13,P42,P4C0 | 01223000 |
| | | TEST E | P28,40,P4CT | 01223100 |
| | | TRANSFER | ,449 | 01223200 |
| | 4LM1 | ASSIGN | 10,P17 | 01223300 |
| | | ASSIGN | 25,41 | 01223400 |
| | | ASSIGN | 27,40 | 01223500 |
| | | TRANSFER | ,C44 | 01223600 |
| | 04CZ | SPLIT | 1,RE4A,,60 | 01223700 |
| | | TRANSFER | ,P4C44 | 01223800 |
| | 04CB | ASSIGN | 10,P17 | 01223900 |
| | | ASSIGN | 25,41 | 01224000 |
| | | ASSIGN | 27,41 | 01224100 |
| | | TRANSFER | ,C44 | 01224200 |
| | 04CT | ASSIGN | 27,41 | 01224300 |
| | | TRANSFER | ,RLARA | 01224400 |
| | 04CP | LEAK | 27,P4P3 | 01224500 |
| | 04CB | ADVANCE | 4X1(1,V32) | 01224600 |
| | | JULINK | 27,9433,1,14,P14 | 01224700 |
| | | TRANSFER | ,P4C4 | 01224800 |
| | 04CR | SPLIT | 10,P4CU,2,60 | 01224900 |
| | 04CU | ASSIGN | 3,4X1(V33,42) | 01225000 |

PUT IN LOGIC TO
DETECT FAILURES AT
P41 AND TO GO AWAY WITH TEST HOPS
AFTER P41,3700 FOR ALL RUNS

CHANGES TO ALLOW FOR
UNSCHEDULED MAINTENANCE
AT P41 AND TO GO AWAY WITH TEST
HOPS,3700 FOR ALL RUNS

| | | | |
|-------|--|------------------|----------|
| | TEST GE | 23, 41, 0404 | 00225100 |
| | ASSIGN | 0, 441 (V34, 02) | 00225200 |
| | TEST E | 217, 49, 00430 | 00225300 |
| | SAVEVALUE | V1570, V36 | 00225400 |
| | SAVEVALUE | V1590, V36 | 00225500 |
| | SAVEVALUE | 0230, V35 | 00225600 |
| | SAVEVALUE | 10230, V34 | 00225700 |
| 040V | 2J2J2 | V27 | 00225800 |
| 0404 | DATE L2 | 27, 2401 | 00225900 |
| | ASSIGN | 7, V24 | 00226000 |
| | ASSIGN | 20, V35 | 00226100 |
| | ASSIGN | 9, 1 | 00226200 |
| 040K | TEST GE | 207, 23, 040L | 00226300 |
| 040J | TEST L2 | 00, 220, 0404 | 00226400 |
| 040C | DEPART | V27 | 00226500 |
| | ENTER | 07, 23 | 00226600 |
| | ADVANCE | 00 | 00226700 |
| | LEAVE | 07, 01 | 00226800 |
| | JNLY | 07, JNLY, ALL | 00226900 |
| | SAVEVALUE | 20, 22, 017, V35 | 00227000 |
| | SAVEVALUE | V370, V35 | 00227100 |
| | SAVEVALUE | 320, V35 | 00227200 |
| | TEST E | 225, 40, 0400 | 00227300 |
| | TRANSFER | , 2404 | 00227400 |
| 0403 | TEST E | 217, 417, 040V | 00227500 |
| | SAVEVALUE | V1710, V36 | 00227600 |
| | SAVEVALUE | V1720, V36 | 00227700 |
| | SAVEVALUE | 0750, V35 | 00227800 |
| | SAVEVALUE | 10750, V34 | 00227900 |
| | TRANSFER | , 040V | 00228000 |
| 040J | ASSIGN | 7, V27 | 00228100 |
| | ASSIGN | 9, 40 | 00228200 |
| | ASSIGN | 20, V34 | 00228300 |
| | TRANSFER | , 040C | 00228400 |
| 0404 | ASSIGN | 22, V33 | 00228500 |
| | ASSIGN | 0, 029 | 00228600 |
| | ASSIGN | 24, 41 | 00228700 |
| | TEST E | 21, 41, 040J | 00228800 |
| | DEPART | V27 | 00228900 |
| 040D | ASSIGN | 1, 222 | 00229000 |
| | DEPART | 1, 3JEFER | 00229100 |
| | DEPART | 20 | 00229200 |
| | ASSIGN | 25, 41 | 00229300 |
| | TRANSFER | , 040V | 00229400 |
| 040L | LTY | 27, 223 | 00229500 |
| 04020 | SPLIT | 1, 02420 | 00229600 |
| | TRANSFER | , 02421 | 00229700 |
| 0 | | | 00229800 |
| 0 | | | 00229900 |
| 0 | TIME CHANGE OVERALL, RETIREMENT SUBROUTINE | | 00230000 |
| 0 | | | 00230100 |

70 Card 2302 has been modified due to the expansion of the model to accommodate 24 aircraft.

71 Card 2323 has been added to the original logic of the UH-1 baseline model. This block ensures that the values calculated in certain save values are proper. The original model was defined without this block. Whenever more than 10 maintenance actions were generated simultaneously, the accounting of these maintenance actions overflowed into save values which were used for other functions such as monitoring the engine changes, the maintenance actions determined at turnaround inspections, etc. It is felt that this block is extremely critical to the proper actuation of the model. Since not having this block in the model allows for erroneous tabulation of results, a great deal of effort can be expended to find out why the model is accounting for engine changes when the maintenance concept does not call for scheduled engine changes.

70-13429 ASSIGN 22,446(27,P12)
 SAVEVALUE 5,010,012,V15),4
 ASSIGN 12,1
 ASSIGN 6,3
 ASSIGN 25,4135
 ASSIGN 17,13
 SAVEVALUE 50,005,06,41,4
 SAVEVALUE V1750,41
 SAVEVALUE 5250,41
 SAVEVALUE V1760,41
 SAVEVALUE 11250,41
 T2449FE2 ,40A8

FAILURE DETERMINATION ROUTINE

71-13429 ASSIGN 2,PN3
 TABULATE 8
 TEST LE P2,410,POA NEEDED TO ENSURE PROPER SAVEVALUES
 WHEN GREATER THAN 10 HAS BEEN FOUND

POA SAVEVALUE V400,41,M
 ASSIGN 240,41
 ASSIGN 3,PN15
 TABULATE 5
 TABULATE 6
 SAVEVALUE V1730,41
 SAVEVALUE 5000,41
 SAVEVALUE V1740,41
 SAVEVALUE 11000,41
 SAVEVALUE V4010,41,M
 ASSIGN 0,423
 SAVEVALUE 1,PN2
 ASSIGN 5,PN22
 SAVEVALUE 2,2,1,0,M
 POB ASSIGN 22,PN2
 TEST NE 05,41,ARM50
 SAVEVALUE 20,2,1,PN04,M
 ARM50 TEST LE 11,442(2,1),P30
 TABULATE 7
 SPLIT 1,PN4,00
 TEST E P10,47,PDL
 ASSIGN 10,6
 POB ASSIGN 25,41
 POB LOOP 2,POA
 TEST E 025,41,PN4
 TEST E 9V18,1,RLARA

01230200
 01230300
 01230400
 01230500
 01230600
 01230700
 01230800
 01230900
 01231000
 01231100
 01231200
 01231300
 01231400
 01231500
 01231600
 01231700
 01231800
 01231900
 01232000
 01232100
 01232200
 01232300
 01232400
 01232500
 01232600
 01232700
 01232800
 01232900
 01233000
 01233100
 01233200
 01233300
 01233400
 01233500
 01233600
 01233700
 01233800
 01233900
 01234000
 01234100
 01234200
 01234300
 01234400
 01234500
 01234600
 01234700
 01234800
 01234900
 01235000
 01235100
 01235200

72 Cards 2376 to 2377 have been generalized in the manner previously discussed to allow the tests for the PMP and PMI inspections to be functionally dependent upon variables 234, 235, and 236 which are subsequently dependent upon input parameters save values 189, 190, 195, and 196. Thus, modification of these blocks adds generality to the model and provides functional input dependence, rather than logical dependence upon constants within the model.

| | | | |
|-------|-----------|--------------------------------------|----------|
| | JNLIN4 | 0,AR437,1,,,AR439 | 01215100 |
| | SPLIT | 1,AR400,,60 | 01215000 |
| AR439 | TEST E | 010,45,RLAMA | 01215500 |
| | SAVEVALUE | 330,41 | 01215600 |
| | TRANSFER | ,RLARA | 01215700 |
| AR439 | TEST E | 010,45,POD | 01215800 |
| | TEST G | 043,0430,POC | 01215900 |
| AR439 | DATE L9 | 1,030 | 01216000 |
| | TRANSFER | ,POC | 01216100 |
| AR439 | TEST H | 027,41,POD | 01216200 |
| | ASSIGN | 25,40 | 01216300 |
| | ASSIGN | 10,40 | 01216400 |
| | TRANSFER | ,10 | 01216500 |
| AR439 | LEAVE | 32,PTPD | 01216600 |
| AR439 | SAVEVALUE | 2,2,1,000,M | 01216700 |
| | TRANSFER | ,AR435 | 01216800 |
| AR439 | ASSIGN | 27,41 | 01216900 |
| | TEST E | 035,000,AR435 | 01217000 |
| | ASSIGN | 35,0 | 01217100 |
| | TRANSFER | ,TST40 | 01217200 |
| AR439 | TEST L | 043,0135,POD | 01217300 |
| | TRANSFER | ,POC | 01217400 |
| AR439 | TEST L | V107,V230,AR417 GENERAL | 01217500 |
| 72 | TEST L | V11,V230,AR417 TEST FOR CALENDAR PHP | 01217600 |
| | TEST L | V109,V235,AR419 GENERAL | 01217700 |
| | TRANSFER | ,TST40 | 01217800 |
| | | | 01217900 |
| | | | 01218000 |
| | | | 01218100 |
| | | | 01218200 |
| | | | 01218300 |
| | | | 01218400 |
| | | | 01218500 |
| | | | 01218600 |
| | | | 01218700 |
| | | | 01218800 |
| | | | 01218900 |
| | | | 01219000 |
| | | | 01219100 |
| | | | 01219200 |
| | | | 01219300 |
| | | | 01219400 |
| | | | 01219500 |
| | | | 01219600 |
| | | | 01219700 |
| | | | 01219800 |
| | | | 01219900 |
| | | | 01220000 |
| | | | 01220100 |
| | | | 01220200 |
| | | | 01220300 |
| | | | 01220400 |
| | | | 01220500 |
| | | | 01220600 |
| | | | 01220700 |
| | | | 01220800 |
| | | | 01220900 |
| | | | 01221000 |
| | | | 01221100 |
| | | | 01221200 |
| | | | 01221300 |
| | | | 01221400 |
| | | | 01221500 |
| | | | 01221600 |
| | | | 01221700 |
| | | | 01221800 |
| | | | 01221900 |
| | | | 01222000 |
| | | | 01222100 |
| | | | 01222200 |
| | | | 01222300 |
| | | | 01222400 |
| | | | 01222500 |
| | | | 01222600 |
| | | | 01222700 |
| | | | 01222800 |
| | | | 01222900 |
| | | | 01223000 |
| | | | 01223100 |
| | | | 01223200 |
| | | | 01223300 |
| | | | 01223400 |
| | | | 01223500 |
| | | | 01223600 |
| | | | 01223700 |
| | | | 01223800 |
| | | | 01223900 |
| | | | 01224000 |
| | | | 01224100 |
| | | | 01224200 |
| | | | 01224300 |
| | | | 01224400 |
| | | | 01224500 |
| | | | 01224600 |
| | | | 01224700 |
| | | | 01224800 |
| | | | 01224900 |
| | | | 01225000 |
| | | | 01225100 |
| | | | 01225200 |
| | | | 01225300 |
| | | | 01225400 |
| | | | 01225500 |
| | | | 01225600 |
| | | | 01225700 |
| | | | 01225800 |
| | | | 01225900 |
| | | | 01226000 |
| | | | 01226100 |
| | | | 01226200 |
| | | | 01226300 |
| | | | 01226400 |
| | | | 01226500 |
| | | | 01226600 |
| | | | 01226700 |
| | | | 01226800 |
| | | | 01226900 |
| | | | 01227000 |
| | | | 01227100 |
| | | | 01227200 |
| | | | 01227300 |
| | | | 01227400 |
| | | | 01227500 |
| | | | 01227600 |
| | | | 01227700 |
| | | | 01227800 |
| | | | 01227900 |
| | | | 01228000 |
| | | | 01228100 |
| | | | 01228200 |
| | | | 01228300 |
| | | | 01228400 |
| | | | 01228500 |
| | | | 01228600 |
| | | | 01228700 |
| | | | 01228800 |
| | | | 01228900 |
| | | | 01229000 |
| | | | 01229100 |
| | | | 01229200 |
| | | | 01229300 |
| | | | 01229400 |
| | | | 01229500 |
| | | | 01229600 |
| | | | 01229700 |
| | | | 01229800 |
| | | | 01229900 |
| | | | 01230000 |

73 Card 2401 has been modified to make the NORS test a greater than rather than a less than or equal to as originally employed.

| | | | |
|-------|------------|-------------------|----------|
| | ASSIST | 20,4123 | 01240400 |
| | ASSIST | 240,41 | 01240500 |
| | RECEIVE | 32 | 01240600 |
| | SPLIT | 1,RLMRH,,60 | 01240700 |
| | TRANSFER | ,ARRA | 01240800 |
| RLMRH | PRIORITY | 110,9UPPER | 01240900 |
| | SPLIT | 1,RLMRG,,60 | 01241000 |
| RLMRP | JCTN | 32 | 01241100 |
| | ASSIGNABLE | P24 | 01241200 |
| | SAVEVALUE | V197+,41 | 01241300 |
| | SAVEVALUE | 625+,41 | 01241400 |
| | SAVEVALUE | V196+,41 | 01241500 |
| | SAVEVALUE | 1225+,41 | 01241600 |
| | SAVEVALUE | 35+,41 | 01241700 |
| | SAVEVALUE | V195+,41 | 01241800 |
| | SAVEVALUE | 675+,41 | 01241900 |
| | SAVEVALUE | V194+,41 | 01242000 |
| | SAVEVALUE | 1275+,41 | 01242100 |
| | SCAN | 00,10,P14,,,RLMRH | 01242200 |
| | RECEIVE | 32 | 01242300 |
| | JCTN | 31 | 01242400 |
| RLMRH | WATC-1 | RLMRP | 01242500 |
| | TERMINATE | | 01242600 |
| RLMRH | JCTN | 40 | 01242700 |
| | ASSIGNABLE | P24 | 01242800 |
| | SAVEVALUE | 36+,41 | 01242900 |
| | RECEIVE | 40 | 01243000 |
| RLMRP | WATC-1 | RLMRH | 01243100 |
| | JCTN | 32 | 01243200 |
| RLMRH | WATC-1 | RLMRP | 01243300 |
| RLMRH | TERMINATE | | 01243400 |
| | | | 01243500 |
| | | | 01243600 |
| | | | 01243700 |
| | | | 01243800 |
| | | | 01243900 |
| | | | 01244000 |
| | | | 01244100 |
| | | | 01244200 |
| | | | 01244300 |
| | | | 01244400 |
| | | | 01244500 |
| RDAS | TRANSFER | ,025,RPAD,RPAA | 01244600 |
| RDAA | ADVANCE | 4X1(4,4) | 01244700 |
| | ASSIST | 25,41350 | 01244800 |
| | SAVEVALUE | 5+,V46,2,1,4 | 01244900 |
| | SAVEVALUE | 175+,41 | 01245000 |
| | TEST 3 | V13,P439,VDRC4 | 01245100 |
| RDAC | TRANSFER | ,RPAA | 01245200 |
| RDAD | SAVEVALUE | 5+,V46,1,1,4 | 01245300 |
| | SAVEVALUE | 176+,41 | 01245400 |

REPAIR PART ASSESSMENT SUBROUTINE

*
 *
 * 444034ER ASSESSMENT SUBROUTINE

4244 ASSIGN 1,43
 4245 ASSIGN V47,0439
 TEST E 025,1350,4441
 ASSIGN V51,0401
 TRANSFER ,4445
 4241 ASSIGN V51,0455
 4242 LOOP 1,4249

*
 *
 * 4242 SUBROUTINE

4243 TEST E 025,41350,4242
 4244 ASSIGN 4,059
 TRANSFER ,4245
 4245 ASSIGN 3,0130
 4245 TRANSFER 9
 TEST L 00,42,29EA
 ASSIGN 0,42

*
 * 39E SUBROUTINE

39FA TRANSFER ,J45A
 39EB ASSIGN 1,057
 ADVANCE 01
 SAVEVALUE 37,01

*
 *
 *
 * J454COUPLED MAINTENANCE ROUTINE

J44A TEST NE 017,419,42425
 ASSIGN 17,423
 42425 TEST E 027,43, J45B
 J45J ASSIGN 3,029
 ASSIGN 2,029
 ASSIGN 26,41
 J45K 2J2UE V27
 2J2UE 25
 J45E GATE LR 20, J45C
 ASSIGN 7,029
 ASSIGN 20,035
 ASSIGN 9,1
 J45D TEST GE 047,03, J45P
 TEST LE 04,030, J45P
 J45E DEPART V27
 DEPART 25

01205500
 00205600
 01205700
 01205800
 01205900
 01206000
 01206100
 01206200
 01206300
 01206400
 01206500
 01206600
 01206700
 01206800
 01206900
 01207000
 01207100
 01207200
 01207300
 01207400
 01207500
 01207600
 01207700
 01207800
 01207900
 01208000
 01208100
 01208200
 01208300
 01208400
 01208500
 01208600
 01208700
 01208800
 01208900
 01209000
 01209100
 01209200
 01209300
 01209400
 01209500
 01209600
 01209700
 01209800
 01209900
 01210000
 01210100
 01210200
 01210300
 01210400
 01210500

| | | | |
|-------|-----------|-----------------|----------|
| | ENTER | 07,P3 | 00250600 |
| | ADVANCE | P0 | 00250700 |
| | TEST NE | 0V17,<1,AR410 | 00250800 |
| AR415 | LEAVE | 07,P3 | 00250900 |
| | JNLINK | 07,JNLK,ALL | 00251000 |
| | SAVEVALUE | 20,P2,P17,V36 | 00251100 |
| | TEST NE | 017,<10,AR410 | 00251200 |
| AR461 | SAVEVALUE | V590,V36 | 00251300 |
| | SAVEVALUE | 000,V36 | 00251400 |
| | SAVEVALUE | V190,V36 | 00251500 |
| | SAVEVALUE | 9750,V36 | 00251600 |
| | SAVEVALUE | V190,V36 | 00251700 |
| | SAVEVALUE | 11750,V36 | 00251800 |
| | TEST NE | 012,<1,AR457 | 00251900 |
| | SAVEVALUE | 50,V06,V50,V36 | 00252000 |
| AR459 | TEST E | 026,<0,J494 | 00252100 |
| | TEST NE | 05,<0000,CANV | 00252200 |
| | TEST NE | 012,<1,CANV | 00252300 |
| | TEST E | 025,<1350,UN9,1 | 00252400 |
| | SPLIT | 1,1444,,60 | 00252500 |
| | ASSIGN | 17,<01 | 00252600 |
| | TEST LE | V19,F42,M2AA | 00252700 |
| J49L | TEST E | 010,<0,J494 | 00252800 |
| | SPLIT | 1,2L49F,,50 | 00252900 |
| | SPLIT | 1,2L49G,,60 | 00253000 |
| J494 | TRANSFER | ,AR4A | 00253100 |
| AR410 | SAVEVALUE | 50,V06,06,V36 | 00253200 |
| | SAVEVALUE | V2220,V36 | 00253300 |
| | SAVEVALUE | 5500,V36 | 00253400 |
| | SAVEVALUE | V2230,V36 | 00253500 |
| | SAVEVALUE | 11500,V36 | 00253600 |
| | TEST E | 026,<0,J494 | 00253700 |
| | TERMINATE | | 00253800 |
| J499 | SPLIT | 1,J494,,60 | 00253900 |
| | TRANSFER | ,J49T | 00254000 |
| J494 | ASSIGN | 3,<0000 | 00254100 |
| | ASSIGN | 3,P31 | 00254200 |
| | ASSIGN | 2,P27 | 00254300 |
| | ASSIGN | 26,<1 | 00254400 |
| | TRANSFER | ,J49C | 00254500 |
| AR410 | ADVANCE | 010 | 00254600 |
| | ASSIGN | 26,0 | 00254700 |
| | ASSIGN | 00,P19 | 00254800 |
| | SAVEVALUE | 1000,P10 | 00254900 |
| | TRANSFER | ,AR415 | 00255000 |
| J49C | ASSIGN | 7,V27 | 00255100 |
| | ASSIGN | 20,V39 | 00255200 |
| | ASSIGN | 9,<0 | 00255300 |
| | TRANSFER | ,J499 | 00255400 |
| J49P | ASSIGN | 23,P47 | 00255500 |
| | ASSIGN | 21,8J49E | 00255600 |
| | LINK | 07,P23 | 00255700 |
| J49P | ASSIGN | 10,V40 | 00255800 |
| | ASSIGN | 0,P20 | 00255900 |
| | ASSIGN | 26,<1 | 00256000 |

74 Cards 2607 through 2608 have been modified in the manner previously discussed to ensure against improper activation of the PMI and PMP logic and also to generalize the test for PMP and PMI activation.

| | | | | |
|-------|------------|-----------------|-----------------------|----------|
| | TEST E | P8,41,UNSS | | 00256100 |
| | DEPART | V27 | | 00256200 |
| | DEPART | 25 | | 00256300 |
| | PRIORITY | 1,1JPPER | | 00256400 |
| | TEST NE | P12,41,AR411 | | 00256500 |
| | PRIORITY | 60 | | 00256600 |
| J494 | ASSIGN | 8,P19 | | 00256700 |
| | ASSIGN | 26,40 | | 00256800 |
| | TEST NE | V35,0,AR459 | | 00256900 |
| | TEST E | P8,40,UNSS | | 00257000 |
| | TRANSFER | ,J494 | | 00257100 |
| AR411 | PRIORITY | 0 | | 00257200 |
| | TRANSFER | ,UNSS | | 00257300 |
| AR457 | SAVEVALUE | 5,V46,06,V36 | | 00257400 |
| | TRANSFER | ,AR455 | | 00257500 |
| AR459 | DATE | V27 | | 00257600 |
| | DATE | 25 | | 00257700 |
| | DATE LS | 20 | | 00257800 |
| | DEPART | V27 | | 00257900 |
| | DEPART | 25 | | 00258000 |
| | TRANSFER | ,J494 | | 00258100 |
| | | | | 00258200 |
| | | | | 00258300 |
| | | | | 00258400 |
| | | | | 00258500 |
| | | | | 00258600 |
| | | | | 00258700 |
| | | | | 00258800 |
| | | | | 00258900 |
| | | | | 00259000 |
| AR4A | DATE | P26 | | 00259100 |
| | PRIORITY | 90,9JPPER | | 00259200 |
| | TEST NE | P20,4123,ARRB | | 00259300 |
| | TEST NE | P8,40,ARRB | | 00259400 |
| | TEST E | P444.1,ARRB | | 00259500 |
| | TRANSFER | .533,ARRB,ARR4 | | 00259600 |
| AR4M | LOGICS | 21 | | 00259700 |
| AR4B | ASSIGNABLE | P24 | | 00259800 |
| AR4J | DATE | 84LAR2 | | 00259900 |
| | ASSIGN | 19,40 | | 00260000 |
| | ASSIGN | 28,40 | | 00260100 |
| | ASSIGN | 20,40 | | 00260200 |
| | ASSIGN | 25,40 | | 00260300 |
| | ASSIGN | 16,40 | | 00260400 |
| AR4C | DATE | 9 | | 00260500 |
| | SAVEVALUE | 189,0,V60 | | 00260600 |
| | TEST E | P27,41,ARRD | | 00260700 |
| | ASSIGN | 27,41 | | 00260800 |
| | TRANSFER | ,ARRC | | 00260900 |
| AR4D | DATE LS | 21,ARRP | | 00261000 |
| AR4E | LOGICS | 21 | | 00261100 |
| | TEST NE | P35,999,ARRB | | 00261200 |
| | TEST L | V187,V234,AR417 | GENERAL | 00261300 |
| | TEST L | V11,V236,AR417 | TEST FOR CALENDAR PHP | 00261400 |
| | TEST L | V108,V235,AR419 | GENERAL | 00261500 |
| AR4B | ASSIGN | 17,2 | | 00261600 |
| | DATE | 84 | | 00261700 |
| | ASSIGN | 5,40 | | 00261800 |

75 Card 2619 has been added to allow model activation without a daily inspection.

.

76 Card 2637 has been added to prevent off-shift maintenance.

77 Cards 2638 and 2639 have been added to provide accounting of NORS delay time.

| | | | |
|------|----------|----------------------------|----------|
| | TRANSFER | 932, 14.5 | 01261200 |
| | TEST LE | V13, F42, AAR4 | 01261300 |
| | ASSIGN | 35.0 | 01261400 |
| | TRANSFER | , TEST 43 | 01261500 |
| 430F | DATE LE | 1, AAR | 01261600 |
| | TEST VE | 317, 415, A19 | 01261700 |
| | TEST E | 3V11, 41, AAR | 01261800 |
| 79 | TEST SE | 441(1, 3), 41, AAR GENERAL | 01261900 |
| | TRANSFER | , 323 | 01262000 |
| 4404 | ASSIGN | 27, 41 | 01262100 |
| | ASSIGN | 13, 2 | 01262200 |
| | TRANSFER | , 244 | 01262300 |
| | | | 01262400 |
| | | | 01262500 |
| | | | 01262600 |
| | | | 01262700 |
| | | | 01262800 |
| | | | 01262900 |
| | | | 01263000 |
| | | | 01263100 |
| | | | 01263200 |
| | | | 01263300 |
| | | | 01263400 |
| | | | 01263500 |
| | | | 01263600 |
| | | | 01263700 |
| | | | 01263800 |
| | | | 01263900 |
| | | | 01264000 |
| | | | 01264100 |
| | | | 01264200 |
| | | | 01264300 |
| | | | 01264400 |
| | | | 01264500 |
| | | | 01264600 |
| | | | 01264700 |
| | | | 01264800 |
| | | | 01264900 |
| | | | 01265000 |
| | | | 01265100 |
| | | | 01265200 |
| | | | 01265300 |
| | | | 01265400 |
| | | | 01265500 |
| | | | 01265600 |
| | | | 01265700 |
| | | | 01265800 |
| | | | 01265900 |
| | | | 01266000 |
| | | | 01266100 |
| | | | 01266200 |
| | | | 01266300 |
| | | | 01266400 |
| | | | 01266500 |
| | | | 01266600 |
| | | | 01266700 |
| | | | 01266800 |
| | | | 01266900 |
| | | | 01267000 |
| | | | 01267100 |
| | | | 01267200 |
| | | | 01267300 |
| | | | 01267400 |
| | | | 01267500 |
| | | | 01267600 |
| | | | 01267700 |
| | | | 01267800 |
| | | | 01267900 |
| | | | 01268000 |
| | | | 01268100 |
| | | | 01268200 |
| | | | 01268300 |
| | | | 01268400 |
| | | | 01268500 |
| | | | 01268600 |
| | | | 01268700 |
| | | | 01268800 |
| | | | 01268900 |
| | | | 01269000 |
| | | | 01269100 |
| | | | 01269200 |
| | | | 01269300 |
| | | | 01269400 |
| | | | 01269500 |
| | | | 01269600 |
| | | | 01269700 |
| | | | 01269800 |
| | | | 01269900 |
| | | | 01270000 |

4400/CAVITATIONIZATION ROUTINE

| | | |
|-------|-----------|---|
| V100A | TEST VE | 441(1, 7), 41, VJRA |
| | ASSIGN | 1, V61 |
| V100V | TEST LE | 245, F440, VJRA |
| | TRANSFER | 10 |
| | ASSIGN | 14, 41 |
| | SP_IT | 1, 2, 425, 25 |
| | TRANSFER | 21 |
| 76 | TEST E | 3V13, 41 TEST FOR PREVENTING TEE SHIFT MAINT. |
| 77 | SAVEVALUE | V2324, 41 |
| | SAVEVALUE | 10250, 41 |
| | SP_IT | 1, 2, 425, 25 |
| | TRANSFER | , 4244 |
| V100B | SP_IT | 1, VJRA |
| | TRANSFER | , VJRA |
| V100C | TRANSFER | 21 |
| | TRANSFER | , 244 |
| V100A | ASSIGN | 23, 70 |
| | TEST E | V52, 2425 |
| | TEST E | 48V79, 40 |
| | ASSIGN | 1, 40 |
| | DATE LE | 22, VJRA |
| | DATE LE | 23 |
| | SPAN | 12, 14, 214, VJRA |
| | SP_IT | 1, VJRA, 60 |
| | SP_IT | 1, VJRA, 61 |
| | SP_IT | 1, 2, 425, 25 |
| | TRANSFER | , VJRA |
| 2440 | ASSIGN | 17, 422 |
| | TRANSFER | , 244 |
| V100Z | IN_IVC | 24, VJRA, 1, 14, 14 |
| V100S | TRANSFER | 110 |
| V100V | IN_IVC | 11 |
| V1004 | IN_IVC | 23, 2425 |
| V1004 | TRANSFER | 23 |
| | TEST E | 48V79, 40 |
| V100S | IN_IVC | 24, 244, 1, VJRA |
| | SAVEVALUE | 75, 41, 4 |
| | SAVEVALUE | 423, 22, 4 |

Reproduced from
best available copy.

| | | | |
|------|-----------|---------------------|----------|
| | DATE L3 | 20 | 01266900 |
| | LOGICR | 20 | 01266900 |
| | TEST E | 1475, 40, 4394 | 01267000 |
| | ASSIGN | 1, 475 | 01267100 |
| | JULINK | 20, 2043, 1, 14, 21 | 01267200 |
| | DIFFER | | 01267300 |
| VJRC | TRANSLATE | 11 | 01267400 |
| | SAVEVALUE | 50, 435, 2, 41, 4 | 01267500 |
| | LOGICR | 23 | 01267600 |
| | ASSIGN | 13, 414 | 01267700 |
| | TRANSLATE | 5 | 01267800 |
| | ASSIGN | 1, 45331 | 01267900 |
| CANP | ASSIGN | 3, 454 | 01268000 |
| | ASSIGN | 2, 457 | 01268100 |
| | ASSIGN | 0, 455 | 01268200 |
| | TEST L | 20, 45, 454E | 01268300 |
| | ASSIGN | 4, 45 | 01268400 |
| CANE | DIFFER | 427 | 01268500 |
| | DIFFER | 40 | 01268600 |
| CANP | DATE L3 | 20, 204E | 01268700 |
| | ASSIGN | 7, 424 | 01268800 |
| | ASSIGN | 20, 435 | 01268900 |
| | ASSIGN | 5, 41 | 01269000 |
| CANP | TEST GE | 207, 23, 204J | 01269100 |
| | TEST LE | 20, 220, 204L | 01269200 |
| CANP | DEPART | 427 | 01269300 |
| | DEPART | 40 | 01269400 |
| | ENTER | 47, 23 | 01269500 |
| | ADVANCE | 20 | 01269600 |
| | LEAVE | 47, 23 | 01269700 |
| | JULINK | 27, 204, 404L | 01269800 |
| | ASSIGN | 17, 23 | 01269900 |
| | SAVEVALUE | 20, 22, 217, 435 | 01270000 |
| | SAVEVALUE | 435, 436 | 01270100 |
| | SAVEVALUE | 510, 435 | 01270200 |
| | SAVEVALUE | 50, 435, 2, 436 | 01270300 |
| | TEST E | 224, 40, 2044 | 01270400 |
| | TEST E | 21, 45331, 2044 | 01270500 |
| | TRANSFER | 4244 | 01270600 |
| VJRC | ASSIGN | 14, 41 | 01270700 |
| | TRANSLATE | 11 | 01270800 |
| | LINK | 30, 424 | 01270900 |
| VJRC | LOGICR | 22 | 01271000 |
| VJRC | TRANSLATE | 11 | 01271100 |
| | SPLIT | 1, 424, 40 | 01271200 |
| | SPLIT | 1, 2, 424, 40 | 01271300 |
| | SPLIT | 1, 424, 40 | 01271400 |
| | ASSIGN | 14, 41 | 01271500 |
| VJRL | DIFFER | 10, 424 | 01271600 |
| | ASSIGN | 2, 424, 1, 2141 | 01271700 |
| | LINK | 12 | 01271800 |
| VJRC | LINK | 29, 22 | 01271900 |
| VJRC | LOGICR | 23 | 01272000 |
| | DIFFER | | 01272100 |

78 Card 2774 has been added to prevent off-shift maintenance.

| | | | |
|------|-----------|--|----------|
| | TRANSFER | ,VJRR | 00272200 |
| C4V8 | SPLIT | 1,VJRV,,60 | 00272300 |
| | ASSIGN | 22,X4*23 | 00272400 |
| | SPLIT | 1,VJRV,,60 | 00272500 |
| VJRR | PRIORITY | 50 | 00272600 |
| | ASSIGN | 1,V61 | 00272700 |
| | ASSIGN | 3,V68 | 00272800 |
| | TEST E | 23,X4*23(1,P14),VJRR | 00272900 |
| | SAVEVALUE | 4,1,X14,X3 | 00273000 |
| VJRR | ADVANCE | 01 | 00273100 |
| | ASSIGN | 10,X15 | 00273200 |
| | TABLE | 6 | 00273300 |
| | TABLE | 17 | 00273400 |
| | DATE LR | 25 | 00273500 |
| | TEST E | V62,X428 | 00273600 |
| | LOGIC | 25 | 00273700 |
| | SAVEVALUE | 62,P32 | 00273800 |
| | JULINK | 28,VRRP,ALL | 00273900 |
| | DATE LR | 25 | 00274000 |
| | DATE LR | 25,CAND | 00274100 |
| | LOGIC | 26 | 00274200 |
| C4V4 | TERMINATE | | 00274300 |
| C4V8 | LOGIC | 24 | 00274400 |
| | TEST E | 22,X4*23,VJRR | 00274500 |
| | SAVEVALUE | 75,X1,X | 00274600 |
| | TRANSFER | ,VJRR | 00274700 |
| VJRR | LOGIC | 10 | 00274800 |
| | DATE LR | 27 | 00274900 |
| | DATE LR | 28,VRRR | 00275000 |
| | TEST E | 22,X52,VJRR | 00275100 |
| | LOGIC | 29 | 00275200 |
| VJRR | TERMINATE | | 00275300 |
| | ADVANCE | 10 | 00275400 |
| | PRIORITY | 11 | 00275500 |
| | TRANSFER | ,VJRR | 00275600 |
| C4V4 | ASSIGN | 24,X4*23 | 00275700 |
| | JULINK | 29,CAND,ALL,12,P14 | 00275800 |
| | SAVEVALUE | 75,P14,X | 00275900 |
| | PRIORITY | 110,VJRR | 00276000 |
| | DATE LR | 23 | 00276100 |
| | TRANSFER | ,VJRR | 00276200 |
| VJRR | DATE LR | 25,VRRR | 00276300 |
| | LOGIC | 27 | 00276400 |
| | JULINK | 29,VRRR,ALL,12,P14 | 00276500 |
| | VJRR | | 00276600 |
| | SCAN | 10,22,X62,,VJRR | 00276700 |
| | LOGIC | 24 | 00276800 |
| | LOGIC | 27 | 00276900 |
| | LOGIC | 25 | 00277000 |
| | TEST E | 210,X1,VJRR | 00277100 |
| | ASSIGN | 22,X42 | 00277200 |
| VJRR | LOGIC | 26 | 00277300 |
| | TEST E | 5V19,X1 TEST FOR PREVENTING JFF SHIPP MAINT. | 00277400 |
| | SAVEVALUE | 536,X1 | 00277500 |

79 Cards 2776 and 2777 have been added to account for NORS times by aircraft and platoon.

| | | | | |
|------|-----------|--------------------|---------------------------------|----------|
| 79 | SAVEVALUE | V2326.41 | THESE SAVEVALUES SHOULD ACCOUNT | 01277400 |
| | SAVEVALUE | 14234.41 | FOR 4734 BY A/C & C7. | 01277700 |
| | JULIAC | 30,4734,ALL.13,PIU | | 01277900 |
| | RECHUR | 12 | | 01277900 |
| V30X | SPLIT | 1.21425 | | 01279000 |
| | TRANSFER | .4234 | | 01279100 |
| V30J | LOSTIC | 27 | | 01279200 |
| | SATE LQ | 25 | | 01279300 |
| | TRANSFER | .4734 | | 01279400 |
| C4VF | ASSIST | 7.477 | | 01279500 |
| | ASSIST | 20.473 | | 01279600 |
| | ASSIST | 9.47 | | 01279700 |
| | TRANSFER | .2443 | | 01279800 |
| C4VJ | ASSIST | 21.477 | | 01279900 |
| | ASSIST | 21.92444 | | 01279900 |
| | LTAC | 27.223 | | 01279100 |
| C4VL | ASSIST | 19.473 | | 01279200 |
| | ASSIST | 4.223 | | 01279300 |
| | ASSIST | 26.41 | | 01279400 |
| | TEST E | 23.47, C4VK | | 01279500 |
| | DEPART | V27 | | 01279600 |
| | DEPART | 44 | | 01279700 |
| | PRICITV | 1.3JFER | | 01279800 |
| | PRICITV | 90 | | 01279900 |
| C4V4 | ASSIST | 4.213 | | 01280000 |
| | ASSIST | 26.47 | | 01280100 |
| | TRANSFER | .2443 | | 01280200 |
| | | | | 01280300 |
| | | | | 01280400 |
| | | | | 01280500 |
| | | | | 01280600 |
| | | | | 01280700 |
| | | | | 01280800 |
| | | | | 01280900 |
| | | | | 01281000 |
| | | | | 01281100 |
| | | | | 01281200 |
| | | | | 01281300 |
| | | | | 01281400 |
| | | | | 01281500 |
| | | | | 01281600 |
| | | | | 01281700 |

| | | | |
|------|---|----------------|--|
| | SERVICE PLATON, DIRECT SUPPORT, GENERAL SUPPORT COMP REPAIR | | |
| T444 | ASSIST | 6.46 | |
| | TRANSFER | .1443 | |
| T44A | ASSIST | 4.463 | |
| | ADJULATE | 13 | |
| | ADJULATE | 14 | |
| | TEST LE | V133.241, AR46 | |
| | TEST LE | V140.241, AR47 | |
| | TEST VE | V65.40, T444 | |
| | TEST L | 24.46, T443 | |

| | | | |
|-------|-----------|--------------------|----------|
| | ASSIGN | 0,45 | 01241400 |
| 1440 | DEFE | 05 | 01241500 |
| 1440 | DATE SVP | 0400,1440 | 01242000 |
| | DEPART | 05 | 01242100 |
| | ENTER | 0400 | 01242200 |
| | ASSIGN | 32,047 | 01242300 |
| | DEFE | 05 | 01242400 |
| 1440 | TEST SE | 0032,031,1445 | 01242500 |
| | DEPART | 05 | 01242600 |
| | ENTER | 032,031 | 01242700 |
| | SAVEVALUE | 0500,070 | 01242800 |
| | SAVEVALUE | 750,070 | 01242900 |
| | ADVANCE | 00 | 01243000 |
| | LEAVE | 0400 | 01243100 |
| | LEAVE | 032,031 | 01243200 |
| | JULIAC | 31,1440,ALL | 01243300 |
| | JULIAC | 55,1440,ALL,32,032 | 01243400 |
| | ASSIGN | 0,45 | 01243500 |
| | SAVEVALUE | 77,047,4 | 01243600 |
| | TEST L | 0477,071,04005 | 01243700 |
| | ASSIGN | 00,45 | 01243800 |
| | TEST S | 0477,072,04005 | 01243900 |
| | ASSIGN | 00,45 | 01244000 |
| | TEST S | 0477,073,04007 | 01244100 |
| | ASSIGN | 00,45 | 01244200 |
| | SAVEVALUE | 1000,45 | 01244300 |
| 1440 | SAVEVALUE | 50,040,06,45,4 | 01244400 |
| | SAVEVALUE | 50,040,06,070 | 01244500 |
| | SAVEVALUE | 0130,070 | 01244600 |
| | SAVEVALUE | 0500,070 | 01244700 |
| | SAVEVALUE | 0130,070 | 01244800 |
| | SAVEVALUE | 1250,070 | 01244900 |
| | TEST E | 06,46,0400 | 01245000 |
| DEPA | TABLE | 15 | 01245100 |
| | TERMINATE | | 01245200 |
| 02405 | SAVEVALUE | 1700,45 | 01245300 |
| | TRANSFER | ,1440 | 01245400 |
| 02405 | SAVEVALUE | 1000,45 | 01245500 |
| | TRANSFER | ,02405 | 01245600 |
| 02407 | SAVEVALUE | 1000,45 | 01245700 |
| | TRANSFER | ,02405 | 01245800 |
| 02406 | ASSIGN | 12,1 | 01245900 |
| | POSTIVITY | 0 | 01246000 |
| | ASSIGN | 20,031 | 01246100 |
| | ASSIGN | 30,45 | 01246200 |
| | TEST E | 020,45,0400 | 01246300 |
| | ASSIGN | 26,45 | 01246400 |
| 02407 | ASSIGN | 27,1 | 01246500 |
| | ASSIGN | 17,10 | 01246600 |
| | ASSIGN | 0,7 | 01246700 |
| | SAVEVALUE | 1170,45 | 01246800 |
| | SAVEVALUE | 50,040,06,45,4 | 01246900 |
| | TRANSFER | ,0400 | 01247000 |
| 02408 | ASSIGN | 26,1 | 01247100 |

80 Cards 2888 and 2889 have been modified to allow for up to 24 TBO components.

| | | |
|----------------------------|--------------------|----------|
| TEST E | 301,47,400JA | 01202400 |
| 400L ASSIGN | 11,201 | 01202500 |
| ENTER | 01,011 | 01202600 |
| DATE LR | 20 | 01202700 |
| LEAVE | 01,011 | 01202800 |
| TERMINATE | | 01202900 |
| 400K ASSIGN | 15,076 | 01203000 |
| ASSIGN | 9,015 | 01203100 |
| 400J3 SPLIT | 1,400L,25 | 01203200 |
| ASSIGN | 21,5400M | 01203300 |
| ASSIGN | 23,41 | 01203400 |
| LINK | 01,033 | 01203500 |
| 400D LINK | 56,0157 | 01203600 |
| 400F TRANSFER | ,400J | 01203700 |
| 400M TEST E | 00,001,400K | 01203800 |
| TRANSFER | ,400L | 01203900 |
| 400G LOGIC | 20 | 01204000 |
| ADVANCE | 03 | 01204100 |
| JULINK | 56,400F,1,13,,400N | 01204200 |
| TRANSFER | ,400C | 01204300 |
| 400JA ASSIGN | 9,901 | 01204400 |
| TRANSFER | ,400B | 01204500 |
| | | 01204600 |
| | | 01204700 |
| | | 01204800 |
| | | 01204900 |
| 400E ASSIGN | 3,4X3(1,1) | 01205000 |
| ASSIGN | 2,4X3(2,1) | 01205100 |
| ADVANCE | 4X3(1,4) | 01205200 |
| 400J LOGIC | 20 | 01205300 |
| DATE LR | 30,400AA | 01205400 |
| LOGIC | 30 | 01205500 |
| ASSIGN | 0,11 | 01205600 |
| 400A3 JULINK | V77,INLK,ALL | 01205700 |
| LOGP | 0,400A3 | 01205800 |
| 400A3 ADVANCE | 03 | 01205900 |
| TRANSFER | ,400J | 01206000 |
| 400A4 LOGIC | 30 | 01206100 |
| ASSIGN | 0,11 | 01206200 |
| 400A3 JULINK | V79,INLK,ALL | 01206300 |
| LOGP | 0,400A3 | 01206400 |
| ADVANCE | 02 | 01206500 |
| ADVANCE | V105 | 01206600 |
| TRANSFER | ,400J | 01206700 |
| | | 01206800 |
| | | 01206900 |
| | | 01207000 |
| 4 DATA COMPILATION ROUTINE | | 01207100 |
| 400Z ADVANCE | 42 | 01207200 |
| 400A ASSIGN | 3,4X1(5,1) | 01207300 |
| PRICITY | 1,3UTPEH | 01207400 |
| ADVANCE | V9 | 01207500 |
| SAVEVALUE | 1,6,11,V80 | 01207600 |
| ASSIGN | 5,11 | 01207700 |
| 40035 ASSIGN | 1,0179 | 01207800 |
| ASSIGN | 2,0179 | |

81 Cards 2990 and 2991 have been revised to define new save values as a result of increasing the platoon size to 24 aircraft.

82 Card 2994 has been modified to allow for 24 TBO components.

83 Cards 2998 and 3002 have been added to account for NORS times.

84 Cards 3008, 3012, and 3023 have been modified, due to the save value changes generated by increasing the model size to 24 aircraft.

| | | | | |
|-------|-----------|-----------------|--|----------|
| | 499134 | 3, V190 | | 01297900 |
| | 499134 | 4, V191 | | 00299000 |
| | SAVEVALUE | V177, V192 | | 00299100 |
| | SAVEVALUE | V199, V182 | | 01299200 |
| | LONG | 5, AR435 | | 00299300 |
| | SAVEVALUE | 5570, V193 | | 00299400 |
| | SAVEVALUE | 1130, V183 | | 01299500 |
| | 499134 | 6, K1 | | 00299600 |
| | 499134 | 1, 526 | | 00299700 |
| | 499134 | 2, 551 | | 01299800 |
| | 499134 | 3, 251 | | 00299900 |
| (81) | 499134 | 4, 776 | | 00299000 |
| | 499134 | 5, 1451 | | 00299100 |
| 12440 | 499134 | 7, V212 | | 00299200 |
| | SAVEVALUE | V193, V213 | | 00299300 |
| (82) | TEST 2 | 06, K191, AR443 | | 00299400 |
| | SAVEVALUE | 657, V214 | | 00299500 |
| | SAVEVALUE | 193, V215 | | 01299600 |
| | 499134 | 2, 699 | | 00299700 |
| (83) | 499134 | 3, 1424 | ESTABLISH SAVEVALUE NOS. FOR NOS /AVAIL. | 00299800 |
| | 499134 | 1, 574 | | 00299900 |
| 12443 | SAVEVALUE | 42, V216 | | 00300000 |
| | 499134 | 2, K1 | | 00300100 |
| (83) | 499134 | 3, K1 | SET UP SAVE FOR NOS FOR CALC. AVAIL | 00300200 |
| | TEST 2 | 01, 691, AR448 | | 00300300 |
| | LONG | 1, AR449 | | 00300400 |
| | TEST 4 | | | 00300500 |
| 12449 | SAVEVALUE | 700, V217 | | 00300600 |
| | 499134 | 1, 226 | | 00300700 |
| (84) | 499134 | 2, 1426 | | 00300800 |
| | 499134 | 3, 201 | | 00300900 |
| | 499134 | 4, 701 | | 00301000 |
| 12450 | SAVEVALUE | 48, V219 | | 00301100 |
| (84) | TEST 2 | 04, 724, AR451 | | 00301200 |
| | 499134 | 10, 1 | | 00301300 |
| | 499134 | 20, 1 | | 00301400 |
| | 499134 | 30, 1 | | 00301500 |
| | 499134 | 40, 1 | | 00301600 |
| | TRANSFER | 42450 | | 00301700 |
| 12451 | SAVEVALUE | 725, V220 | | 00301800 |
| | 499134 | 1, 226 | | 00301900 |
| | 499134 | 2, 201 | | 00302000 |
| | 499134 | 3, 726 | | 00302100 |
| 12452 | SAVEVALUE | 43, V218 | | 00302200 |
| (84) | TEST 2 | 03, 740, AR453 | | 00302300 |
| | 499134 | 10, 1 | | 00302400 |
| | 499134 | 20, 1 | | 00302500 |
| | 499134 | 30, 1 | | 00302600 |
| | TRANSFER | 42452 | | 00302700 |
| 12453 | SAVEVALUE | 750, V221 | | 00302800 |

| | | | |
|--------|---------------------|------------------|----------|
| | ASSIGN | 2.411 | 01302000 |
| DCRC | ASSIGN | 3.4X1(6,P2) | 01303000 |
| | TEST GE | P3.41,DCRC | 01303100 |
| | ASSIGN | 17.25 | 01303200 |
| | SAVEVALUE | 20,P3,P17,P3 | 01303300 |
| | SAVEVALUE | 20+,P3 | 01303400 |
| | SAVEVALUE | V30+,P3 | 01303500 |
| DCRC | LOAD | 2.0025 | 01303600 |
| | TEST E | 4X1(5.8).40,DCRC | 01303700 |
| DCRC | ASSIGN | 2.25 | 01303800 |
| | RENAME FOR SAVE RUN | | 01303900 |
| DCRC | ASSIGN | 2.25 | 01304000 |
| DCRC | ASSIGN | 3.418 | 01304100 |
| DCRC | ASSIGN | 3.4X2(P3,P2) | 01304200 |
| | SAVEVALUE | 20.15,42.45 | 01304300 |
| | LOAD | 3.0025 | 01304400 |
| | LOAD | 2.0025 | 01304500 |
| RENAME | TRANSFER | ,RENAME | 01304600 |
| RENAME | ASSIGN | 10.41 | 01304700 |
| | ASSIGN | 20.41 | 01304800 |
| | ASSIGN | 30.41 | 01304900 |
| | ASSIGN | 40.41 | 01305000 |
| | ASSIGN | 50.41 | 01305100 |
| | ASSIGN | 60.41 | 01305200 |
| | TRANSFER | ,RENAME | 01305300 |
| RENAME | SAVEVALUE | 195,V229 | 01305400 |
| | SAVEVALUE | 195,V230 | 01305500 |
| | PLIT | 1.0022 | 01305600 |
| | ASSIGN | 1 | 01305700 |
| RENAME | ASSIGN | 2.43 | 01305800 |
| | ASSIGN | 3.4X1(5,7) | 01305900 |
| | SAVEVALUE | 20.0.17,P3 | 01306000 |
| | SAVEVALUE | V37+,P3 | 01306100 |
| | SAVEVALUE | 32+,P3 | 01306200 |
| RENAME | SAVEVALUE | 90+,41 | 01306300 |
| | SAVEVALUE | 197+,41 | 01306400 |
| | SAVEVALUE | V195+,41 | 01306500 |
| | SAVEVALUE | 600+,41 | 01306600 |
| | SAVEVALUE | V198+,41 | 01306700 |
| | SAVEVALUE | 1200+,41 | 01306800 |
| | SAVEVALUE | V195+,41 | 01306900 |
| | SAVEVALUE | 675+,41 | 01307000 |
| | SAVEVALUE | V198+,41 | 01307100 |
| | SAVEVALUE | 1275+,41 | 01307200 |
| | RENAME | | 01307300 |
| RENAME | ASSIGN | 9 | 01307400 |
| | SAVEVALUE | 35+,41 | 01307500 |
| | SAVEVALUE | 63+,41 | 01307600 |
| | RENAME | | 01307700 |
| RENAME | RENAME | | 01307800 |
| RENAME | RENAME | 0 | 01307900 |

85 The START card has been modified to suppress the output of the GPSS chains and give 5 intermediate outputs.

This card should be tailored to the specific needs of the analyst by referring to the IBM GPSS manual.

86 The output editor has been modified to contain the baseline CH-47 mission and maintenance concept narrative.

Also, the output editor has been modified to accommodate a platoon size of 24 aircraft.

| | | | | |
|-------|--|---|--|-----------|
| | ADVANCE | 460 | | 00309000 |
| DATA1 | ASSIGN | 2,48 | | 00309100 |
| DATA2 | ADVANCE | 230 | | 00309200 |
| | TEXT E | V224,40,DATA8 | | 00309300 |
| DATA3 | ADVANCE | 410 | | 00309400 |
| | LOGP | 2,DATA2 | | 00309500 |
| | ADVANCE | 4710 | | 00309600 |
| | TEXT E | V224,40,DATA6 | | 00309700 |
| DATA5 | ADVANCE | 410 | | 00309800 |
| | TRANSFER | ,DATA1 | | 00309900 |
| DATA8 | SAVEVALUE | 199-,V225 | | 00310000 |
| | SAVEVALUE | 197-,V227 | | 00310100 |
| | TRANSFER | ,DATA3 | | 00310200 |
| DATA6 | SAVEVALUE | 199-,V226 | | 00310300 |
| | SAVEVALUE | 197-,V228 | | 00310400 |
| | TRANSFER | ,DATA5 | | 00310500 |
| | LIST | | | 00310600 |
| 85 | START | 5,1 | | 00310700 |
| | EJECT | | | 00310800 |
| | SPACE | 3 | | 00310900 |
| 86-57 | TEXT | ARMY R & M SIMULATION MODEL | | 003110100 |
| 57 | TEXT | ----- | | 003110200 |
| | SPACE | 2 | | 003110300 |
| 2 | TEXT | SCENARIO SIMULATED | | 003110400 |
| | SPACE | 1 | | 003110500 |
| 3 | TEXT | THE PLATOON OF SIXTEEN ARMY HELICOPTERS | | 003110600 |
| | SPACE | 1 | | 003110700 |
| 4 | TEXT | FLYING PROGRAM CONSISTED OF SEVEN FLYING DAYS PER WEEK | | 003110800 |
| | WITH EACH SIMULATION INTERVAL COVERING A FOUR WEEK PERIOD, | | | 003110900 |
| | SPACE | 1 | | 003111000 |
| 5 | TEXT | MISSION LENGTH IS 1.5 HOURS WITH A DEMAND OF 50 FLYING HOURS PER AIRCRAFT FOR THE FOUR WEEK PERIOD, | | 003111100 |
| | SPACE | 1 | | 003111200 |
| 6 | TEXT | LAUNCH SCHEDULE DURING EACH FLYING DAY | | 003111300 |
| 5 | TEXT | 0700 3 AIRCRAFT 0930 3 AIRCRAFT | | 003111400 |
| 5 | TEXT | 1000 3 AIRCRAFT 1130 3 AIRCRAFT | | 003111500 |
| 5 | TEXT | 1300 3 AIRCRAFT 1430 3 AIRCRAFT | | 003111600 |
| 5 | TEXT | 1600 3 AIRCRAFT 1730 3 AIRCRAFT | | 003111700 |
| 5 | TEXT | 1900 3 AIRCRAFT | | 003111800 |
| | SPACE | 1 | | 003111900 |
| 8 | TEXT | OTHER FLIGHT CONSIDERATIONS | | 003112000 |
| 5 | TEXT | STANDBY AIRCRAFT READY AT ALL TIMES | | 003112100 |
| | DURING THE SCHEDULED FLYING INTERVALS, | | | 003112200 |
| 6 | TEXT | MISSION FLIGHT IS POSSIBLE UP TO THIRTY MINUTES AFTER SCHEDULED FLIGHT TIME; AFTER THIS INTERVAL, FLIGHT IS SCRUBBED. | | 003112300 |
| | SPACE | 2 | | 003112400 |
| 2 | TEXT | MAINTENANCE CONCEPT SIMULATED | | 003112500 |
| | SPACE | 1 | | 003112600 |
| 4 | TEXT | PERIODIC MAINTENANCE INSPECTIONS | | 003112700 |
| | OCUR EVERY 100 FLYING HOURS | | | 003112800 |
| | SPACE | 1 | | 003112900 |

Reproduced from
best available copy.

| | | | | |
|--------|--|---|---|----------|
| 0 | TEXT | | | 00313200 |
| | SPACE | 1 | | 00313300 |
| 0 | TEXT | | PREVENTIVE MAINTENANCE DAILY (PMD) INSPECTIONS OCCUR | 00313400 |
| DAILY | IF THE AIRCRAFT HAS FLOWN 72 HOURS IF NOT FLYING. | | | 00313500 |
| | SPACE | 1 | | 00313600 |
| 0 | TEXT | | MAINTENANCE PERSONNEL ARE AVAILABLE BETWEEN 0600 AND | 00313700 |
| 2200 | COVERING THE SEVEN DAY FLYING PERIOD PER WEEK | | | 00313800 |
| | SPACE | 1 | | 00313900 |
| 0 | TEXT | | THE ONLY EXCEPTION TO THE ABOVE OCCURS WHEN THERE ARE | 00314000 |
| NOT | SUFFICIENT AIRCRAFT TO MEET THE FIRST MISSION DEMAND OF NEXT DAY | | | 00314100 |
| | SPACE | 1 | | 00314200 |
| 0 | TEXT | | THE AIRCRAFT CONSISTS OF 223 ELEMENTS. THERE ARE 16 | 00314300 |
| TIME | CHANGE COMPONENTS. | | | 00314400 |
| | SPACE | 1 | | 00314500 |
| 0 | TEXT | | AN INTERMEDIATE INSPECTION IS PERFORMED EVERY 10 | 00314600 |
| FLIGHT | HOURS | | | 00314700 |
| | SPACE | 1 | | 00314800 |
| 0 | TEXT | | ORGANIZATIONAL MAINTENANCE INCLUDES AN INTEGRATED DIR | 00314900 |
| ECT | REPAIR MAINTENANCE CAPABILITY | | | 00315000 |
| | SPACE | 1 | | 00315100 |
| 0 | TEXT | | OFF EQUIPMENT COMPONENT MAINTENANCE IS PERFORMED | 00315200 |
| AT | THE DEPT LEVEL. | | | 00315300 |
| | SPACE | 1 | | 00315400 |
| 0 | TEXT | | CLASSIFICATION OF WTS STATUS IS A DUMMY | 00315500 |
| | SPACE | 1 | | 00315600 |
| 2 | TEXT | | EVALUATION | 00315700 |
| | SPACE | 1 | | 00315800 |
| 10 | TEXT | | BASIC C4007C MISSION AND MAINTENANCE SCHEDULE | 00315900 |
| | SPACE | 1 | | 00316000 |
| 10 | TEXT | | MONTHLY MISSION | 00316100 |
| | SPACE | 1 | | 00316200 |
| 10 | TEXT | | INFORMATION | 00316300 |
| | SPACE | 3 | | 00316400 |
| 10 | TEXT | | AIRCRAFT MISSIONS MISSIONS | 00316500 |
| | SPACE | 1 | | 00316600 |
| 10 | TEXT | | TAIL NUMBER CALLS FLOWN | 00316700 |
| | SPACE | 3 | | 00316800 |
| 10 | TEXT | | 1 00201,2/XXXX 00226 | 00316900 |
| | SPACE | 1 | | 00317000 |
| 10 | TEXT | | 2 00251,2/1,XXXX,XX 00227 | 00317100 |
| | SPACE | 3 | | 00317200 |
| 10 | TEXT | | 3 00252,2/1,XXXX,XX 00228 | 00317300 |
| | SPACE | 3 | | 00317400 |
| 10 | TEXT | | 3 00253,2/1,XXXX,XX 00228 | 00317500 |
| | SPACE | 3 | | 00317600 |
| 10 | TEXT | | 3 00253,2/1,XXXX,XX 00228 | 00317700 |
| | SPACE | 3 | | 00317800 |
| 10 | TEXT | | 3 00253,2/1,XXXX,XX 00228 | 00317900 |
| | SPACE | 3 | | 00318000 |
| 10 | TEXT | | 3 00253,2/1,XXXX,XX 00228 | 00318100 |
| | SPACE | 3 | | 00318200 |

| | | | |
|---------|---|-------------------|----------|
| SPACE | 3 | | 00319200 |
| 10 TEXT | | 4 | 00319300 |
| ,2/XXXX | | 0X254,2/1_XXXX,X0 | 00319400 |
| SPACE | 3 | | 00319500 |
| 10 TEXT | | 5 | 00319600 |
| ,2/XXXX | | 0X255,2/1_XXXX,X0 | 00319700 |
| SPACE | 3 | | 00319800 |
| 10 TEXT | | 6 | 00319900 |
| ,2/XXXX | | 0X256,2/1_XXXX,X0 | 00319000 |
| SPACE | 3 | | 00319100 |
| 10 TEXT | | 7 | 00319200 |
| ,2/XXXX | | 0X257,2/1_XXXX,X0 | 00319300 |
| SPACE | 3 | | 00319400 |
| 10 TEXT | | 8 | 00319500 |
| ,2/XXXX | | 0X258,2/1_XXXX,X0 | 00319600 |
| SPACE | 3 | | 00319700 |
| 10 TEXT | | 9 | 00319800 |
| ,2/XXXX | | 0X259,2/1_XXXX,X0 | 00319900 |
| SPACE | 3 | | 00320000 |
| 10 TEXT | | 10 | 00320100 |
| ,2/XXXX | | 0X260,2/1_XXXX,X0 | 00320200 |
| SPACE | 3 | | 00320300 |
| 10 TEXT | | 11 | 00320400 |
| ,2/XXXX | | 0X261,2/1_XXXX,X0 | 00320500 |
| SPACE | 3 | | 00320600 |
| 10 TEXT | | 12 | 00320700 |
| ,2/XXXX | | 0X262,2/1_XXXX,X0 | 00320800 |
| SPACE | 3 | | 00320900 |
| 10 TEXT | | 13 | 00321000 |
| ,2/XXXX | | 0X263,2/1_XXXX,X0 | 00321100 |
| SPACE | 3 | | 00321200 |
| 10 TEXT | | 14 | 00321300 |
| ,2/XXXX | | 0X264,2/1_XXXX,X0 | 00321400 |
| SPACE | 3 | | 00321500 |
| 10 TEXT | | 15 | 00321600 |
| ,2/XXXX | | 0X265,2/1_XXXX,X0 | 00321700 |
| SPACE | 3 | | 00321800 |
| 10 TEXT | | 16 | 00321900 |
| ,2/XXXX | | 0X266,2/1_XXXX,X0 | 00322000 |
| SPACE | 3 | | 00322100 |
| 10 TEXT | | 17 | 00322200 |
| ,2/XXXX | | 0X267,2/1_XXXX,X0 | 00322300 |
| SPACE | 3 | | 00322400 |
| 10 TEXT | | 18 | 00322500 |
| ,2/XXXX | | 0X268,2/1_XXXX,X0 | 00322600 |
| SPACE | 3 | | 00322700 |
| 10 TEXT | | 19 | 00322800 |
| ,2/XXXX | | 0X269,2/1_XXXX,X0 | 00322900 |
| SPACE | 3 | | 00323000 |
| 10 TEXT | | 20 | 00323100 |
| ,2/XXXX | | 0X270,2/1_XXXX,X0 | 00323200 |
| SPACE | 3 | | 00323300 |
| 10 TEXT | | 21 | 00323400 |
| | | 0X271,2/XXXX | |

| | | | | |
|------------|---|----|--|----------------------------|
| ,2/XXXX | | | 0X271,2/1,XXXX,XX | 00323500 |
| SPACE | 3 | | | 00323600 |
| 13 TEXT | | 22 | 0X222,2/XXXX | 0X247=00323700 |
| ,2/XXXX | | | 0X272,2/1,XXXX,XX | 00323800 |
| SPACE | 3 | | | 00323900 |
| 13 TEXT | | 23 | 0X223,2/XXXX | 0X248=00324000 |
| ,2/XXXX | | | 0X273,2/1,XXXX,XX | 00324100 |
| SPACE | 3 | | | 00324200 |
| 13 TEXT | | 24 | 0X224,2/XXXX | 0X249=00324300 |
| ,2/XXXX | | | 0X274,2/1,XXXX,XX | 00324400 |
| 13 TEXT | | | ----- | 00324500 |
| ----- | | | | 00324600 |
| SPACE | 2 | | | 00324700 |
| 13 TEXT | | | 0X225,2/XXXX | 0X250=00324800 |
| ,2/XXXX | | | 0X275,2/1,XXXX,XX | 00324900 |
| EJECT | | | | 00325000 |
| 13 TEXT | | | 0X275,2/1,XXXX,XX | 00325100 |
| SPACE | 1 | | | 00325200 |
| 13 TEXT | | | INSPECTION INFORMATION | 00325300 |
| | | | ----- | 00325400 |
| SPACE | 3 | | | 00325500 |
| 8 TEXT | | | ATCRAFT PREFLIGHT PREFLIGHT DAILY | 00325600 |
| DAILY | | | DAY DAY DAY DAY | 00325700 |
| 8 TEXT | | | TABLE NUMBER OF MAINT. NUMBER OF | 00325800 |
| MAINT. | | | NUMBER OF MAINT. MAINT. | 00325900 |
| 8 TEXT | | | NUMBER OF INSPECTION MAINT. INSPECTION | 00326000 |
| MAINT. | | | INSPECTION MAINT. INSPECTION | 00326100 |
| SPACE | 3 | | | 00326200 |
| 3 TEXT | | | 0X276,2/XXXX | 0X301,2/2LXXXX,XX=00326300 |
| 0X | | | 0X326,2/XXXX | 0X351,2/2LXXXX,XX=00326400 |
| 79 TEXT | | | 0X376,2/XXXX | 0X401,2/2LXXXX,XX=00326500 |
| 029,2/XXXX | | | 0X431,2/2LXXXX,XX | 00326600 |
| SPACE | 3 | | | 00326700 |
| 3 TEXT | | | 0X277,2/XXXX | 0X302,2/2LXXXX,XX=00326800 |
| 0X | | | 0X327,2/XXXX | 0X352,2/2LXXXX,XX=00326900 |
| 79 TEXT | | | 0X377,2/XXXX | 0X402,2/2LXXXX,XX=00327000 |
| 027,2/XXXX | | | 0X432,2/2LXXXX,XX | 00327100 |
| SPACE | 3 | | | 00327200 |
| 3 TEXT | | | 0X278,2/XXXX | 0X303,2/2LXXXX,XX=00327300 |
| 0X | | | 0X328,2/XXXX | 0X353,2/2LXXXX,XX=00327400 |
| 79 TEXT | | | 0X378,2/XXXX | 0X403,2/2LXXXX,XX=00327500 |
| 029,2/XXXX | | | 0X433,2/2LXXXX,XX | 00327600 |
| SPACE | 3 | | | 00327700 |
| 3 TEXT | | | 0X279,2/XXXX | 0X304,2/2LXXXX,XX=00327800 |
| 0X | | | 0X329,2/XXXX | 0X354,2/2LXXXX,XX=00327900 |
| 79 TEXT | | | 0X379,2/XXXX | 0X404,2/2LXXXX,XX=00328000 |
| 027,2/XXXX | | | 0X434,2/2LXXXX,XX | 00328100 |
| SPACE | 3 | | | 00328200 |
| 3 TEXT | | | 0X280,2/XXXX | 0X305,2/2LXXXX,XX=00328300 |
| 0X | | | 0X330,2/XXXX | 0X355,2/2LXXXX,XX=00328400 |
| 79 TEXT | | | 0X380,2/XXXX | 0X405,2/2LXXXX,XX=00328500 |
| 029,2/XXXX | | | 0X435,2/2LXXXX,XX | 00328600 |
| SPACE | 3 | | | 00328700 |

| | | | | |
|------------|-------|-------------------|-------------------|--------------------------|
| 3 | TEXT | 6 | 0x281,2/xxxx | 0x306,2/2Lxxx,x=00328800 |
| x0 | | 0x331,2/xxxx | 0x356,2/2Lxxx,xxx | 00329000 |
| 79 | TEXT | 0x391,2/xxxx | 0x006,2/2Lxxx,xxx | 0x=00329000 |
| 031,2/xxxx | | 0x056,2/2Lxxx,xxx | | 00329100 |
| | SPACE | 3 | | 00329200 |
| 3 | TEXT | 7 | 0x282,2/xxxx | 0x307,2/2Lxxx,x=00329300 |
| x0 | | 0x332,2/xxxx | 0x357,2/2Lxxx,xxx | 00329400 |
| 79 | TEXT | 0x392,2/xxxx | 0x007,2/2Lxxx,xxx | 0x=00329500 |
| 032,2/xxxx | | 0x057,2/2Lxxx,xxx | | 00329600 |
| | SPACE | 3 | | 00329700 |
| 3 | TEXT | 9 | 0x283,2/xxxx | 0x308,2/2Lxxx,x=00329800 |
| x0 | | 0x333,2/xxxx | 0x358,2/2Lxxx,xxx | 00329900 |
| 79 | TEXT | 0x393,2/xxxx | 0x009,2/2Lxxx,xxx | 0x=00330000 |
| 033,2/xxxx | | 0x058,2/2Lxxx,xxx | | 00330100 |
| | SPACE | 3 | | 00330200 |
| 3 | TEXT | 9 | 0x284,2/xxxx | 0x309,2/2Lxxx,x=00330300 |
| x0 | | 0x334,2/xxxx | 0x359,2/2Lxxx,xxx | 00330400 |
| 79 | TEXT | 0x394,2/xxxx | 0x009,2/2Lxxx,xxx | 0x=00330500 |
| 034,2/xxxx | | 0x059,2/2Lxxx,xxx | | 00330600 |
| | SPACE | 3 | | 00330700 |
| 3 | TEXT | 10 | 0x285,2/xxxx | 0x310,2/2Lxxx,x=00330800 |
| x0 | | 0x335,2/xxxx | 0x360,2/2Lxxx,xxx | 00330900 |
| 79 | TEXT | 0x395,2/xxxx | 0x010,2/2Lxxx,xxx | 0x=00331000 |
| 035,2/xxxx | | 0x060,2/2Lxxx,xxx | | 00331100 |
| | SPACE | 3 | | 00331200 |
| 3 | TEXT | 11 | 0x286,2/xxxx | 0x311,2/2Lxxx,x=00331300 |
| x0 | | 0x336,2/xxxx | 0x361,2/2Lxxx,xxx | 00331400 |
| 79 | TEXT | 0x396,2/xxxx | 0x011,2/2Lxxx,xxx | 0x=00331500 |
| 036,2/xxxx | | 0x061,2/2Lxxx,xxx | | 00331600 |
| | SPACE | 3 | | 00331700 |
| 3 | TEXT | 12 | 0x287,2/xxxx | 0x312,2/2Lxxx,x=00331800 |
| x0 | | 0x337,2/xxxx | 0x362,2/2Lxxx,xxx | 00331900 |
| 79 | TEXT | 0x397,2/xxxx | 0x012,2/2Lxxx,xxx | 0x=00332000 |
| 037,2/xxxx | | 0x062,2/2Lxxx,xxx | | 00332100 |
| | SPACE | 3 | | 00332200 |
| 3 | TEXT | 13 | 0x288,2/xxxx | 0x313,2/2Lxxx,x=00332300 |
| x0 | | 0x338,2/xxxx | 0x363,2/2Lxxx,xxx | 00332400 |
| 79 | TEXT | 0x398,2/xxxx | 0x013,2/2Lxxx,xxx | 0x=00332500 |
| 038,2/xxxx | | 0x063,2/2Lxxx,xxx | | 00332600 |
| | SPACE | 3 | | 00332700 |
| 3 | TEXT | 14 | 0x289,2/xxxx | 0x314,2/2Lxxx,x=00332800 |
| x0 | | 0x339,2/xxxx | 0x364,2/2Lxxx,xxx | 00332900 |
| 79 | TEXT | 0x399,2/xxxx | 0x014,2/2Lxxx,xxx | 0x=00333000 |
| 039,2/xxxx | | 0x064,2/2Lxxx,xxx | | 00333100 |
| | SPACE | 3 | | 00333200 |
| 3 | TEXT | 15 | 0x290,2/xxxx | 0x315,2/2Lxxx,x=00333300 |
| x0 | | 0x340,2/xxxx | 0x365,2/2Lxxx,xxx | 00333400 |
| 79 | TEXT | 0x390,2/xxxx | 0x015,2/2Lxxx,xxx | 0x=00333500 |
| 040,2/xxxx | | 0x065,2/2Lxxx,xxx | | 00333600 |

| | | | | | |
|------------|-------|---------|-------------------|--------------------------|-------------|
| | SPACE | 3 | | | 00333700 |
| 3 | TEXT | 16 | #X291,2/XXXX | #X316,2/2LXXX,X=00333800 | |
| X0 | | | #X301,2/XXXX | #X366,2/2LXXX,XX# | 00333900 |
| 79 | TEXT | | #X391,2/XXXX | #X416,2/2LXXX,XX# | #X=00334000 |
| 001,2/XXXX | | | #X066,2/2LXXX,XX# | | 00334100 |
| | SPACE | 3 | | | 00334200 |
| 3 | TEXT | 17 | #X292,2/XXXX | #X317,2/2LXXX,X=00334300 | |
| X0 | | | #X302,2/XXXX | #X367,2/2LXXX,XX# | 00334400 |
| 79 | TEXT | | #X392,2/XXXX | #X417,2/2LXXX,XX# | #X=00334500 |
| 002,2/XXXX | | | #X067,2/2LXXX,XX# | | 00334600 |
| | SPACE | 3 | | | 00334700 |
| 3 | TEXT | 18 | #X293,2/XXXX | #X318,2/2LXXX,X=00334800 | |
| X0 | | | #X303,2/XXXX | #X368,2/2LXXX,XX# | 00334900 |
| 79 | TEXT | | #X393,2/XXXX | #X418,2/2LXXX,XX# | #X=00335000 |
| 003,2/XXXX | | | #X068,2/2LXXX,XX# | | 00335100 |
| | SPACE | 3 | | | 00335200 |
| 3 | TEXT | 19 | #X294,2/XXXX | #X319,2/2LXXX,X=00335300 | |
| X0 | | | #X304,2/XXXX | #X369,2/2LXXX,XX# | 00335400 |
| 79 | TEXT | | #X394,2/XXXX | #X419,2/2LXXX,XX# | #X=00335500 |
| 004,2/XXXX | | | #X069,2/2LXXX,XX# | | 00335600 |
| | SPACE | 3 | | | 00335700 |
| 3 | TEXT | 20 | #X295,2/XXXX | #X320,2/2LXXX,X=00335800 | |
| X0 | | | #X305,2/XXXX | #X370,2/2LXXX,XX# | 00335900 |
| 79 | TEXT | | #X395,2/XXXX | #X420,2/2LXXX,XX# | #X=00336000 |
| 005,2/XXXX | | | #X070,2/2LXXX,XX# | | 00336100 |
| | SPACE | 3 | | | 00336200 |
| 3 | TEXT | 21 | #X296,2/XXXX | #X321,2/2LXXX,X=00336300 | |
| X0 | | | #X306,2/XXXX | #X371,2/2LXXX,XX# | 00336400 |
| 79 | TEXT | | #X396,2/XXXX | #X421,2/2LXXX,XX# | #X=00336500 |
| 006,2/XXXX | | | #X071,2/2LXXX,XX# | | 00336600 |
| | SPACE | 3 | | | 00336700 |
| 3 | TEXT | 22 | #X297,2/XXXX | #X322,2/2LXXX,X=00336800 | |
| X0 | | | #X307,2/XXXX | #X372,2/2LXXX,XX# | 00336900 |
| 79 | TEXT | | #X397,2/XXXX | #X422,2/2LXXX,XX# | #X=00337000 |
| 007,2/XXXX | | | #X072,2/2LXXX,XX# | | 00337100 |
| | SPACE | 3 | | | 00337200 |
| 3 | TEXT | 23 | #X298,2/XXXX | #X323,2/2LXXX,X=00337300 | |
| X0 | | | #X308,2/XXXX | #X373,2/2LXXX,XX# | 00337400 |
| 79 | TEXT | | #X398,2/XXXX | #X423,2/2LXXX,XX# | #X=00337500 |
| 008,2/XXXX | | | #X073,2/2LXXX,XX# | | 00337600 |
| | SPACE | 3 | | | 00337700 |
| 3 | TEXT | 24 | #X299,2/XXXX | #X324,2/2LXXX,X=00337800 | |
| X0 | | | #X309,2/XXXX | #X374,2/2LXXX,XX# | 00337900 |
| 79 | TEXT | | #X399,2/XXXX | #X424,2/2LXXX,XX# | #X=00338000 |
| 009,2/XXXX | | | #X074,2/2LXXX,XX# | | 00338100 |
| | SPACE | 1 | | | 00338200 |
| 16 | TEXT | | ----- | | 00338300 |
| | | | ----- | | 00338400 |
| | | | | | 00338500 |
| | | | | | 00338600 |
| 0 | TEXT | 47474LM | | | 00338700 |

| | | | | | |
|------------|------------------|-------------------------|-------------------------|------------------|-------------|
| 0 | TEXT | 737AL0 | 0X300,2/XXXX | 0X325,2/2LXXX.XX | 00339900 |
| 0 | | 0X350,2/XXXX | 0X375,2/2LXXX.XX | | 00339900 |
| 79 | TEXT | 0X400,2/XXXX | 0X425,2/2LXXX.XX | | 00339900 |
| 450,2/XXXX | | 0X475,2/2LXXX.XX | | | 00339900 |
| | SUBJECT | | | | 00339900 |
| | SPACE | 3 | | | 00339900 |
| 19 | TEXT | | 40NTHLY MAINTENANCE | | 00339900 |
| | SPACE | 1 | | | 00339900 |
| 19 | TEXT | | INFORMATION | | 00339900 |
| | SPACE | 3 | | | 00339900 |
| 0 | TEXT | AIRCRAFT | NUMBER OF MAINT ACTIONS | MAINTENANCE | 00339900 |
| E 44V | WJURS | ELAPSED MAINT. DOWNTIME | | | 00339900 |
| 0 | TEXT | TAIL | | | 00340000 |
| 0 | TEXT | UNNUMBER | UNSCHEMULED | SCHEDULED | UNSCHEMULED |
| 0 | SCHEDULED | UNSCHEMULED | SCHEDULED | | 00340100 |
| | SPACE | 3 | | | 00340200 |
| 5 | TEXT | 1 | 0X476,2/XXXX | 0X501,2/XXXX | 00340300 |
| | 0X551,2/2LXXX.XX | | 0X526,2/2LXXX.XX | | 00340400 |
| 77 | TEXT | 0X601,2/1LXXX.XX | 0X576,2/1LXXX.XX | | 00340500 |
| | SPACE | 3 | | | 00340600 |
| 5 | TEXT | 2 | 0X477,2/XXXX | 0X502,2/XXXX | 00340700 |
| | 0X552,2/2LXXX.XX | | 0X527,2/2LXXX.XX | | 00340800 |
| 77 | TEXT | 0X602,2/1LXXX.XX | 0X577,2/1LXXX.XX | | 00340900 |
| | SPACE | 3 | | | 00341000 |
| 5 | TEXT | 3 | 0X478,2/XXXX | 0X503,2/XXXX | 00341100 |
| | 0X553,2/2LXXX.XX | | 0X528,2/2LXXX.XX | | 00341200 |
| 77 | TEXT | 0X603,2/1LXXX.XX | 0X578,2/1LXXX.XX | | 00341300 |
| | SPACE | 3 | | | 00341400 |
| 5 | TEXT | 4 | 0X479,2/XXXX | 0X504,2/XXXX | 00341500 |
| | 0X554,2/2LXXX.XX | | 0X529,2/2LXXX.XX | | 00341600 |
| 77 | TEXT | 0X604,2/1LXXX.XX | 0X579,2/1LXXX.XX | | 00341700 |
| | SPACE | 3 | | | 00341800 |
| 5 | TEXT | 5 | 0X480,2/XXXX | 0X505,2/XXXX | 00341900 |
| | 0X555,2/2LXXX.XX | | 0X530,2/2LXXX.XX | | 00342000 |
| 77 | TEXT | 0X605,2/1LXXX.XX | 0X580,2/1LXXX.XX | | 00342100 |
| | SPACE | 3 | | | 00342200 |
| 5 | TEXT | 6 | 0X481,2/XXXX | 0X506,2/XXXX | 00342300 |
| | 0X556,2/2LXXX.XX | | 0X531,2/2LXXX.XX | | 00342400 |
| 77 | TEXT | 0X606,2/1LXXX.XX | 0X581,2/1LXXX.XX | | 00342500 |
| | SPACE | 3 | | | 00342600 |
| 5 | TEXT | 7 | 0X482,2/XXXX | 0X507,2/XXXX | 00342700 |
| | 0X557,2/2LXXX.XX | | 0X532,2/2LXXX.XX | | 00342800 |
| 77 | TEXT | 0X607,2/1LXXX.XX | 0X582,2/1LXXX.XX | | 00342900 |
| | SPACE | 3 | | | 00343000 |
| 5 | TEXT | 8 | 0X483,2/XXXX | 0X508,2/XXXX | 00343100 |
| | 0X558,2/2LXXX.XX | | 0X533,2/2LXXX.XX | | 00343200 |
| 77 | TEXT | 0X608,2/1LXXX.XX | 0X583,2/1LXXX.XX | | 00343300 |
| | SPACE | 3 | | | 00343400 |
| 5 | TEXT | 9 | 0X484,2/XXXX | 0X509,2/XXXX | 00343500 |
| | 0X559,2/2LXXX.XX | | 0X534,2/2LXXX.XX | | 00343600 |
| 77 | TEXT | 0X609,2/1LXXX.XX | 0X584,2/1LXXX.XX | | 00343700 |
| | SPACE | 3 | | | 00343800 |
| 5 | TEXT | 10 | 0X485,2/XXXX | 0X510,2/XXXX | 00343900 |
| | | | | | 00344000 |

| | | | | |
|----|-----------------------|-------------------|--------------|----------|
| | 0X560,2/2LXXX.XX0 | 0X535,2/2LXXX.XX0 | 00344100 | |
| 77 | TEXT 0X610,2/1LXXX.X0 | 0X595,2/1LXXX.X0 | 00344200 | |
| | SPACE 3 | | 00344300 | |
| 5 | TEXT 11 | 0X496,2/XXXX | 0X511,2/XXXX | 00344400 |
| | 0X561,2/2LXXX.XX0 | 0X536,2/2LXXX.XX0 | 00344500 | |
| 77 | TEXT 0X611,2/1LXXX.X0 | 0X596,2/1LXXX.X0 | 00344600 | |
| | SPACE 3 | | 00344700 | |
| 5 | TEXT 12 | 0X497,2/XXXX | 0X512,2/XXXX | 00344800 |
| | 0X562,2/2LXXX.XX0 | 0X537,2/2LXXX.XX0 | 00344900 | |
| 77 | TEXT 0X612,2/1LXXX.X0 | 0X597,2/1LXXX.X0 | 00345000 | |
| | SPACE 3 | | 00345100 | |
| 5 | TEXT 13 | 0X498,2/XXXX | 0X513,2/XXXX | 00345200 |
| | 0X563,2/2LXXX.XX0 | 0X538,2/2LXXX.XX0 | 00345300 | |
| 77 | TEXT 0X613,2/1LXXX.X0 | 0X598,2/1LXXX.X0 | 00345400 | |
| | SPACE 3 | | 00345500 | |
| 5 | TEXT 14 | 0X499,2/XXXX | 0X514,2/XXXX | 00345600 |
| | 0X564,2/2LXXX.XX0 | 0X539,2/2LXXX.XX0 | 00345700 | |
| 77 | TEXT 0X614,2/1LXXX.X0 | 0X599,2/1LXXX.X0 | 00345800 | |
| | SPACE 3 | | 00345900 | |
| 5 | TEXT 15 | 0X490,2/XXXX | 0X515,2/XXXX | 00346000 |
| | 0X565,2/2LXXX.XX0 | 0X540,2/2LXXX.XX0 | 00346100 | |
| 77 | TEXT 0X615,2/1LXXX.X0 | 0X590,2/1LXXX.X0 | 00346200 | |
| | SPACE 3 | | 00346300 | |
| 5 | TEXT 16 | 0X491,2/XXXX | 0X516,2/XXXX | 00346400 |
| | 0X566,2/2LXXX.XX0 | 0X541,2/2LXXX.XX0 | 00346500 | |
| 77 | TEXT 0X616,2/1LXXX.X0 | 0X591,2/1LXXX.X0 | 00346600 | |
| | SPACE 3 | | 00346700 | |
| 5 | TEXT 17 | 0X492,2/XXXX | 0X517,2/XXXX | 00346800 |
| | 0X567,2/2LXXX.XX0 | 0X542,2/2LXXX.XX0 | 00346900 | |
| 77 | TEXT 0X617,2/1LXXX.X0 | 0X592,2/1LXXX.X0 | 00347000 | |
| | SPACE 3 | | 00347100 | |
| 5 | TEXT 17 | 0X493,2/XXXX | 0X518,2/XXXX | 00347200 |
| | 0X568,2/2LXXX.XX0 | 0X543,2/2LXXX.XX0 | 00347300 | |
| 77 | TEXT 0X618,2/1LXXX.X0 | 0X593,2/1LXXX.X0 | 00347400 | |
| | SPACE 3 | | 00347500 | |
| 5 | TEXT 19 | 0X494,2/XXXX | 0X519,2/XXXX | 00347600 |
| | 0X569,2/2LXXX.XX0 | 0X544,2/2LXXX.XX0 | 00347700 | |
| 77 | TEXT 0X619,2/1LXXX.X0 | 0X594,2/1LXXX.X0 | 00347800 | |
| | SPACE 3 | | 00347900 | |
| 5 | TEXT 20 | 0X495,2/XXXX | 0X520,2/XXXX | 00348000 |
| | 0X570,2/2LXXX.XX0 | 0X545,2/2LXXX.XX0 | 00348100 | |
| 77 | TEXT 0X620,2/1LXXX.X0 | 0X595,2/1LXXX.X0 | 00348200 | |
| | SPACE 3 | | 00348300 | |
| 5 | TEXT 21 | 0X496,2/XXXX | 0X521,2/XXXX | 00348400 |
| | 0X571,2/2LXXX.XX0 | 0X546,2/2LXXX.XX0 | 00348500 | |
| 77 | TEXT 0X621,2/1LXXX.X0 | 0X596,2/1LXXX.X0 | 00348600 | |
| | SPACE 3 | | 00348700 | |
| 5 | TEXT 22 | 0X497,2/XXXX | 0X522,2/XXXX | 00348800 |
| | 0X572,2/2LXXX.XX0 | 0X547,2/2LXXX.XX0 | 00348900 | |
| 77 | TEXT 0X622,2/1LXXX.X0 | 0X597,2/1LXXX.X0 | 00349000 | |
| | SPACE 2 | | 00349100 | |
| 5 | TEXT 23 | 0X498,2/XXXX | 0X523,2/XXXX | 00349200 |
| | 0X573,2/2LXXX.XX0 | 0X548,2/2LXXX.XX0 | 00349300 | |
| 77 | TEXT 0X623,2/1LXXX.X0 | 0X598,2/1LXXX.X0 | 00349400 | |

| | | | | | | |
|-------|--------|------------------|--------------------|-------------------|---------------|----------|
| | SPACE | 3 | | | | 00349500 |
| 5 | TEXT | 24 | 0X499,2/XXXX | 0X524,2/XXXX | | 00349600 |
| | TEXT | | 0X574,2/2LXXX,XX | 0X549,2/2LXXX,XX | | 00349700 |
| 77 | TEXT | | 0X624,2/1LXXX,XX | 0X599,2/1LXXX,XX | | 00349800 |
| | SPACE | 1 | | | | 00349900 |
| 16 | TEXT | | | | | 00350000 |
| ----- | | | | | | |
| | TEXT | MONTHLY | | | | 00350100 |
| 4 | TEXT | TOTAL | 0X500,2/XXXX | 0X525,2/XXXX | | 00350200 |
| 4 | TEXT | | 0X575,2/2LXXX,XX | 0X550,2/2LXXX,XX | | 00350300 |
| 77 | TEXT | | 0X625,2/1LXXX,XX | 0X600,2/1LXXX,XX | | 00350400 |
| | OBJECT | | | | | 00350500 |
| | SPACE | 3 | | | | 00350600 |
| 10 | TEXT | | MONTHLY AIRCRAFT | | | 00350700 |
| | SPACE | 1 | | | | 00350800 |
| 10 | TEXT | | CHARACTERISTICS | | | 00350900 |
| 4 | TEXT | | | | | 00351000 |
| ----- | | | | | | |
| | SPACE | 2 | | | | 00351100 |
| 4 | TEXT | AIRCRAFT | DIRECT | NOT | NOT | 00351200 |
| | TEXT | AVAILABILITY | | | | 00351300 |
| 4 | TEXT | TALE | MAINT. MAN | OPERATIONALLY | OPERATIONALLY | 00351400 |
| LLN | TEXT | | | | | 00351500 |
| 4 | TEXT | NUMBER | DOORS PER | READY- | READY- | 00351600 |
| 4 | TEXT | MISSIONS PLANNED | MISSIONS COMPLETED | | | 00351700 |
| 4 | TEXT | PLIGHT HR. | MAINTENANCE | SUPPLY | | 00351800 |
| 4 | TEXT | TOTAL TIME | MISSIONS CALLED | MISSIONS CALLED | | 00351900 |
| ----- | | | | | | |
| | SPACE | 2 | | | | 00352000 |
| 5 | TEXT | 1 | 0X626,2/2LXX,XX | 0X651,2/1LXXXX,XX | | 00352100 |
| 76 | TEXT | | 0X1401,2/1LXXX,XX | 0X676,2/2LXX,XX | | 00352200 |
| 76 | TEXT | | 0X701,2/2LXXX,XX | 0X726,2/2LXXX,XX | | 00352300 |
| | SPACE | 2 | | | | 00352400 |
| 5 | TEXT | 2 | 0X627,2/2LXX,XX | 0X652,2/1LXXXX,XX | | 00352500 |
| 76 | TEXT | | 0X1402,2/1LXXX,XX | 0X677,2/2LXX,XX | | 00352600 |
| 76 | TEXT | | 0X702,2/2LXXX,XX | 0X727,2/2LXXX,XX | | 00352700 |
| | SPACE | 2 | | | | 00352800 |
| 5 | TEXT | 3 | 0X628,2/2LXX,XX | 0X653,2/1LXXXX,XX | | 00352900 |
| 76 | TEXT | | 0X1403,2/1LXXX,XX | 0X678,2/2LXX,XX | | 00353000 |
| 76 | TEXT | | 0X703,2/2LXXX,XX | 0X728,2/2LXXX,XX | | 00353100 |
| | SPACE | 2 | | | | 00353200 |
| 5 | TEXT | 4 | 0X629,2/2LXX,XX | 0X654,2/1LXXXX,XX | | 00353300 |
| 76 | TEXT | | 0X1404,2/1LXXX,XX | 0X679,2/2LXX,XX | | 00353400 |
| 76 | TEXT | | 0X704,2/2LXXX,XX | 0X729,2/2LXXX,XX | | 00353500 |
| | SPACE | 2 | | | | 00353600 |
| 5 | TEXT | 5 | 0X630,2/2LXX,XX | 0X655,2/1LXXXX,XX | | 00353700 |
| 76 | TEXT | | 0X1405,2/1LXXX,XX | 0X680,2/2LXX,XX | | 00353800 |
| 76 | TEXT | | 0X705,2/2LXXX,XX | 0X730,2/2LXXX,XX | | 00353900 |
| | SPACE | 2 | | | | 00354000 |
| 5 | TEXT | 6 | 0X631,2/2LXX,XX | 0X656,2/1LXXXX,XX | | 00354100 |
| 76 | TEXT | | 0X1406,2/1LXXX,XX | 0X681,2/2LXX,XX | | 00354200 |

| | | | | |
|----|-------|--------------------|-------------------|-------------------------|
| 76 | TEXT | 0X704,2/2LXXX,XX0 | 0X731,2/2LXXX,XX0 | 01344600 |
| | SPACE | 2 | | 01344700 |
| 5 | TEXT | 7 | 0X632,2/2LXX,XX0 | 0X657,2/1LXXXX,00354400 |
| X0 | | 0X1407,2/1LXXX,XX0 | 0X652,2/2LXX,XX0 | 01344900 |
| 76 | TEXT | 0X707,2/2LXXX,XX0 | 0X732,2/2LXXX,XX0 | 01345000 |
| | SPACE | 2 | | 01345100 |
| 5 | TEXT | 9 | 0X633,2/2LXX,XX0 | 0X658,2/1LXXXX,00355200 |
| X0 | | 0X1409,2/1LXXX,XX0 | 0X653,2/2LXX,XX0 | 01345300 |
| 76 | TEXT | 0X709,2/2LXXX,XX0 | 0X733,2/2LXXX,XX0 | 01345400 |
| | SPACE | 2 | | 01345500 |
| 5 | TEXT | 9 | 0X634,2/2LXX,XX0 | 0X659,2/1LXXXX,00355600 |
| X0 | | 0X1409,2/1LXXX,XX0 | 0X654,2/2LXX,XX0 | 01345700 |
| 76 | TEXT | 0X709,2/2LXXX,XX0 | 0X734,2/2LXXX,XX0 | 01345800 |
| | SPACE | 2 | | 01345900 |
| 5 | TEXT | 10 | 0X635,2/2LXX,XX0 | 0X660,2/1LXXXX,00356100 |
| X0 | | 0X1410,2/1LXXX,XX0 | 0X655,2/2LXX,XX0 | 01346100 |
| 76 | TEXT | 0X711,2/2LXXX,XX0 | 0X735,2/2LXXX,XX0 | 01346200 |
| | SPACE | 2 | | 01346300 |
| 5 | TEXT | 11 | 0X636,2/2LXX,XX0 | 0X661,2/1LXXXX,00356400 |
| X0 | | 0X1411,2/1LXXX,XX0 | 0X656,2/2LXX,XX0 | 01346500 |
| 76 | TEXT | 0X711,2/2LXXX,XX0 | 0X736,2/2LXXX,XX0 | 01346600 |
| | SPACE | 2 | | 01346700 |
| 5 | TEXT | 12 | 0X637,2/2LXX,XX0 | 0X662,2/1LXXXX,00356900 |
| X0 | | 0X1412,2/1LXXX,XX0 | 0X657,2/2LXX,XX0 | 01346900 |
| 76 | TEXT | 0X712,2/2LXXX,XX0 | 0X737,2/2LXXX,XX0 | 01347000 |
| | SPACE | 2 | | 01347100 |
| 5 | TEXT | 13 | 0X638,2/2LXX,XX0 | 0X663,2/1LXXXX,00357200 |
| X0 | | 0X1413,2/1LXXX,XX0 | 0X658,2/2LXX,XX0 | 01347300 |
| 76 | TEXT | 0X713,2/2LXXX,XX0 | 0X738,2/2LXXX,XX0 | 01347400 |
| | SPACE | 2 | | 01347500 |
| 5 | TEXT | 14 | 0X639,2/2LXX,XX0 | 0X664,2/1LXXXX,00357600 |
| X0 | | 0X1414,2/1LXXX,XX0 | 0X659,2/2LXX,XX0 | 01347700 |
| 76 | TEXT | 0X714,2/2LXXX,XX0 | 0X739,2/2LXXX,XX0 | 01347800 |
| | SPACE | 2 | | 01347900 |
| 5 | TEXT | 15 | 0X640,2/2LXX,XX0 | 0X665,2/1LXXXX,00358000 |
| X0 | | 0X1415,2/1LXXX,XX0 | 0X660,2/2LXX,XX0 | 01348100 |
| 76 | TEXT | 0X715,2/2LXXX,XX0 | 0X740,2/2LXXX,XX0 | 01348200 |
| | SPACE | 2 | | 01348300 |
| 5 | TEXT | 16 | 0X641,2/2LXX,XX0 | 0X666,2/1LXXXX,00358400 |
| X0 | | 0X1416,2/1LXXX,XX0 | 0X661,2/2LXX,XX0 | 01348500 |
| 76 | TEXT | 0X716,2/2LXXX,XX0 | 0X741,2/2LXXX,XX0 | 01348600 |
| | SPACE | 2 | | 01348700 |
| 5 | TEXT | 17 | 0X642,2/2LXX,XX0 | 0X667,2/1LXXXX,00358900 |
| X0 | | 0X1417,2/1LXXX,XX0 | 0X662,2/2LXX,XX0 | 01349000 |
| 76 | TEXT | 0X717,2/2LXXX,XX0 | 0X742,2/2LXXX,XX0 | 01349100 |
| | SPACE | 2 | | 01349200 |
| 5 | TEXT | 19 | 0X643,2/2LXX,XX0 | 0X668,2/1LXXXX,00359300 |
| X0 | | 0X1419,2/1LXXX,XX0 | 0X663,2/2LXX,XX0 | 01349400 |
| 76 | TEXT | 0X719,2/2LXXX,XX0 | 0X743,2/2LXXX,XX0 | 01349500 |
| | SPACE | 2 | | 01349600 |
| 5 | TEXT | 19 | 0X644,2/2LXX,XX0 | 0X669,2/1LXXXX,00359800 |
| X0 | | 0X1419,2/1LXXX,XX0 | 0X664,2/2LXX,XX0 | 01349900 |

| | | | | |
|----------|--------|--|-------------------|-------------------------|
| 76 | TEXT | #X719,2/2LXXX,XX# | #X746,2/2LXXX,XX# | 01350000 |
| | SPACE | 2 | | 00350000 |
| 5 | TEXT | 20 | #X695,2/2LXX,XX# | #X670,2/1LXXXX,00350000 |
| X# | | #X1420,2/1LXXX,XX# | #X695,2/2LXX,XX# | 00350100 |
| 76 | TEXT | #X720,2/2LXXX,XX# | #X745,2/2LXXX,XX# | 00350200 |
| | SPACE | 2 | | 00350300 |
| 5 | TEXT | 21 | #X696,2/2LXX,XX# | #X671,2/1LXXXX,00350400 |
| X# | | #X1421,2/1LXXX,XX# | #X696,2/2LXX,XX# | 00350500 |
| 76 | TEXT | #X721,2/2LXXX,XX# | #X746,2/2LXXX,XX# | 00350600 |
| | SPACE | 2 | | 00350700 |
| 5 | TEXT | 22 | #X697,2/2LXX,XX# | #X672,2/1LXXXX,00350800 |
| X# | | #X1422,2/1LXXX,XX# | #X697,2/2LXX,XX# | 00350900 |
| 76 | TEXT | #X722,2/2LXXX,XX# | #X747,2/2LXXX,XX# | 00351000 |
| | SPACE | 2 | | 00351100 |
| 5 | TEXT | 23 | #X698,2/2LXX,XX# | #X673,2/1LXXXX,00351200 |
| X# | | #X1423,2/1LXXX,XX# | #X698,2/2LXX,XX# | 00351300 |
| 76 | TEXT | #X723,2/2LXXX,XX# | #X748,2/2LXXX,XX# | 00351400 |
| | SPACE | 2 | | 00351500 |
| 5 | TEXT | 24 | #X699,2/2LXX,XX# | #X674,2/1LXXXX,00351600 |
| X# | | #X1424,2/1LXXX,XX# | #X699,2/2LXX,XX# | 00351700 |
| 76 | TEXT | #X724,2/2LXXX,XX# | #X749,2/2LXXX,XX# | 00351800 |
| 16 | TEXT | ----- | | 00351900 |
| | | | | 00352000 |
| 4 | TEXT | MONTHLY | | 00352100 |
| 4 | TEXT | TOTAL | #X650,2/2LXX,XX# | #X675,2/1LXXXX,00352200 |
| X# | | #X1425,2/1LXXXX,XX# | #X700,2/2LXX,XX# | 00352300 |
| 77 | TEXT | #X725,2/2LXX,XX# | #X750,2/2LXX,XX# | 00352400 |
| | OBJECT | | | 00352500 |
| | SPACE | 3 | | 00352600 |
| 30 | TEXT | MONTHLY PLATOON STATISTICS | | 00352700 |
| | SPACE | 3 | | 00352800 |
| 18 | TEXT | TOTAL FLYING HOURS DURING THE MONTH | #X163,2/1LX | 00352900 |
| XX,XX | | | | 00353000 |
| | SPACE | 2 | | 00353100 |
| 19 | TEXT | FLYING HOURS-COMPLETED MISSIONS | #X275,2/1LX | 00353200 |
| XX,XX | | | | 00353300 |
| | SPACE | 1 | | 00353400 |
| 19 | TEXT | FLYING HOURS-ABORTED MISSIONS | #X1675,2/1L | 00353500 |
| XX,XX | | | | 00353600 |
| | SPACE | 1 | | 00353700 |
| 19 | TEXT | FLYING HOURS-TEST HOPS | #X800,2/1LX | 00353800 |
| XX,XX | | | | 00353900 |
| | SPACE | 3 | | 00354000 |
| 19 | TEXT | THE SERVICE PLATOON PERFORMED #X176,2/XXXX ON AIRCRAFT | | 00354100 |
| 7 | TEXT | REPAIRS THIS MONTH. | | 00354200 |
| | SPACE | 2 | | 00354300 |
| 19 | TEXT | THE SERVICE PLATOON ALSO REMOVED AND REPLACED #X175,2 | | 00354400 |
| /XXXX | TEXT | PARTS ON THE AIRCRAFT. | | 00354500 |
| | SPACE | 2 | | 00354600 |
| 19 | TEXT | #X177,2/XXXX OF THE PARTS REMOVED AND REPLACED WERE R | | 00354700 |
| REPAIRED | TEXT | AT THE ORGANIZATIONAL LEVEL | | 00354800 |

| | | | | |
|----|--------------------|---|--|----------|
| 19 | SPACE | 2 | | 00344000 |
| L | TEXT | | 0X179,2/XXXX WERE REPAIRED AT THE DIRECT SUPPORT LEVEL | 00345000 |
| | SPACE | 2 | | 00345100 |
| 19 | TEXT | | 0X179,2/XXXX OF THE PARTS WERE REPAIRED AT THE GENERAL | 00345200 |
| L | SUPPORT LEVEL | | | 00345300 |
| | SPACE | 2 | | 00345400 |
| 19 | TEXT | | THERE WERE 0X180,2/XXXX PARTS RETURNED TO THE DEPOT IN | 00345500 |
| N | THE WATS CATEGORY. | | | 00345600 |
| | SPACE | 2 | | 00345700 |
| 19 | TEXT | | THERE WERE ALSO 0X181,2/XXXX PARTS THAT WERE CONDEMNED | 00345800 |
| D. | | | | 00345900 |
| | SPACE | 2 | | 00346000 |
| 19 | TEXT | | 0X182,2/XXXX PARTS WERE DETERMINED TO BE FALSE ALARMS | 00346100 |
| | OUTPUT | | | 00346200 |
| | END | | | 00346300 |
| | | | | 00346400 |

LIST OF SYMBOLS AND ABBREVIATIONS

| | |
|--------------|--|
| A/C | Aircraft |
| ATC | Advanced Technology Component |
| CONUS | Continental United States |
| CPU | Central Processing Unit |
| EMT | Elapsed Maintenance Time |
| F/H | Flight Hour |
| FAIL RATE | Failure Rate |
| FIRM | Flight Inspection Requirements Minimum |
| GPSS | General Purpose System Simulation |
| GSE | Ground Support Equipment |
| HLH | Heavy Lift Helicopter |
| I.O.M. | Index of Merit |
| MA | Maintenance Action |
| MAINT. CONC. | Maintenance Concept |
| MALF/FH | Malfunctions per Flight Hour |
| MEA | Maintenance Engineering Analysis |
| MMH | Maintenance Man-hour |
| MMH/FH | Maintenance Man-hour per Flight Hour |
| MTBMA | Mean Time Between Maintenance Actions |
| MTTR | Mean Time to Repair |
| NORM | Not Operationally Ready - Maintenance |
| NORS | Not Operationally Ready - Supply |
| NRTS | Not Repairable This Station |
| O&M | Operations and Maintenance |
| PMD | Preventive Maintenance Daily |

| | |
|-----------|---|
| PMI | Preventive Maintenance Intermediate |
| PMP | Preventive Maintenance Periodic |
| PPI | Phased Periodic Inspection |
| Q | Queue |
| R&M | Reliability and Maintainability |
| S | Standard deviation of a normal distribution |
| TBO | Time Between Overhaul |
| TOE | Table of Organization and Equipment |
| UTIL | Utilization |
| WUC | Work Unit Code |
| \bar{X} | Mean of a normal distribution |

U.S. Government Printing Office: 1974-636-033/12 Region No. 11